THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK,

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

"The Productions of the Earth will always be in proportion to the culture bestowed upon it."

Vol. VII.—No. 10.] 5th mo. (May) 15th, 1843. [Whole No. 100.

JOSIAH TATUM,

PROPRIETOR AND PUBLISHER,

No. 50 North Fourth Street,

PHILADELPHIA.

Edited by the Proprietor and James Pedder.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Irrigation, Lime and Manure.

THE first essay in the last number of the Cabinet on Irrigation, brings into view a subject that has been too much neglected since the practice of raising artificial grasses has become so universal. Many years since much attention was paid to watering meadows, as it was then called, and a great advantage would still be gained by making available every spring or rill of water. It is the cheapest mode of increasing the productions of grass, as no manure or tillage is required; the water conveys the salts with which it is impregnated, to the roots of the grass where they are needed, and as all water holds air in solution, and generally carbonic acid gas, which is the main food of all plants, this precious substance is deposited by the water exactly where it is most wanted. Spring water and that impregnated with lime, produce the most striking effects, as they contain most saline matter and carbonic acid gas.

Judgment and skill should be brought into requisition in watering grass grounds, otherwise the expected benefits may be much diminished, and care should be taken to carry the water away in a ditch judiciously arranged, after it has performed its functions on the higher grounds, and not suffer it to produce a quagmire covered with sour grass on the lowlands, by stagnation. Keep the water in motion, if it is designed to derive benefit from its application, for if it comes to a stand-still, it does more harm than good. It is hoped benefit will be derived from stirring this *moist* subject.

The next essay on Lime and Magnesia, by a Delawarian, is well done and will bear reading over again. It is now well known that every soil distinguished for its fertility, contains both lime and magnesia in combination with clay and sand, and more or less vegetable matter, and various proportions of minor ingredients in small quantities. But chemists inform us, that they always find lime and magnesia in every good soil, either artificially applied, or in its native location; hence we may rationally conclude, they are exercising very important and indispensable functions in the vegetable economy. Many whose farms are remote from the limestone vallies, are not aware that these precious substances exist in quantities in an invisible form, in the soil they are daily cultivating, and that they are annually reaping the benefit of them in their crops. The hornblend rocks and stone which are abundant in Chester and Delaware counties, contain from 10 to 12 per cent. of lime and magnesia, and by their slow decomposition, furnish a larger per centage to the soil than is ordinarily applied by farmers, and yet these soils are often benefited by an artificial application of lime. The good of lime is never experienced, till it undergoes *solution* and permeates the soil as a fluid; and it only dissolves thoroughly when it becomes a supercarbonate, by the absorption of an excess of carbonic acid gas; hence it is found to be most advantageously applied by spreading it on the grass as a top dressing in autumn, where it is exposed for the longest possible time to the action of the atmosphere. Those who are ignorant of the nature of lime, plough it under immediately after spreading it, under the mistaken apprehension of its good qualities being lost by exposure. This is now known to be the worst plan that can be adopted, as it too soon finds its way down without the aid of the plough. "Too much of a good thing is good for nothing;" so where a soil is sufficiently charged with calcareous earth to promote healthy and vigorous vegetation, more can do no good, and this is equally true in regard to any other description of manure.

Lime renders a stiff soil more loose and friable, by which the pasture of plants is extended, and the air is admitted to a freer circulation through it, by which carbonic

acid gas is formed to feed them, and a cold soil is rendered warmer by increasing its friability. Lime preserves vegetable manure, and causes its action to be continued for a longer time; it neutralizes acidity in the soil by its alkaline properties; it diminishes the injury from drought, and acts as a specific food for plants, as is evident from its being found in them as a component part of their structure.

The "Small Farm" principle upon a large scale, page 282, last number, is in my view, the most valuable essay in the number, and ought to be read attentively by every farmer. Some more "last words" from the same author, would be very acceptable. The rotation of crops there laid down, cannot be beat; it gets the manure out early in the spring, when it should always go to the fields, instead of rotting and wasting all summer in the barn-yard. Top-dressing is the thing to make grass grow, and then plough it down, and grain or any thing else will grow and flourish; no mistake about it, try it yourself, and see if it won't do better than the old plan, of wasting one half and misapplying the other half, at the worst season of the year for applying barn-yard manure. Top-dressing has always been old mother nature's plan of applying nutriment to plants; she seems never to have changed it, which it is probable she would if it had not been the best way. Let us go on then, and assist her in carrying out her plans for our benefit, and see if it won't work well. I had intended to make some remarks on other essays in the same number, but I fear too much space has already been occupied in your valuable journal. AGRICOLA.

The Honey Bee.

THE following extracts are from a delightful article on the Honey Bee, in the last No. of the London Quarterly Review.

The "masses" of every hive consist of two kinds of bees, the workers and the drones. The first are undeveloped females, the second are the males. Over these presides the mother of the hive, the queen-bee. The number of workers in a strong hive is above 15,000, and of drones, about one to ten of these. This proportion, though seldom exact, is never very much exceeded or fallen short of. A single family, where swarming is prevented, will sometimes amount, according to Dr. Bevan, to 50,000 or 60,000. In their wild state, if we may credit the quantity of honey said to be found, they must sometimes greatly exceed this number.

"Sweet is the hum of bees," says Lord Byron; and those who have listened to this music in its full luxury, stretched upon some sunny bed of heather, where the perfume of the crushed thyme struggled with the faint smell of the bracken, can scarcely have failed to watch the little busy musician,

"with honey'd thigh,
That at her flowry work doth sing,"

too well to require a lengthened description of her; how she flits from flower to flower, with capricious fancy, not exhausting the sweets of any one spot, but, on the principle of "live and let live," taking something for herself, and leaving as much or more for the next comer, passing by the just-opening and faded flowers, and deigning to notice not one out of five that are full-blown, combining the philosophy of the Epicurean and Eclectic;—or still more like some fastidious noble, on the grand tour, with all the world before him, hurrying on in restless haste from place to place, skimming over the surface or tasting the sweets of society, carrying off some memento from every spot he has lit upon, and yet leaving plenty to be gleaned by the next traveller, dawdling in one place he knows not why, whisking by another which would have amply repaid his stay, and still pressing onwards as if in search of something, he knows not what—though he too often fails to carry home the same proportion of happiness as his compeer does of honey.

"A bee among the flowers in spring," says Paley, "is one of the cheerfulest objects that can be looked upon. Its life appears to be all enjoyment: *so busy and so pleased.*"

The drone may be known by the noise he makes. Hence his name. He has been the butt of all who have ever written about bees, and is indeed a bye-word all the world over. No one can fail to hit off his character. He is the "lazy yawning drone" of Shakspeare. The

"Immunisque sedens aliena ad pabula
fucus,"

of Virgil. "The drone," says Butler, "is a gross, stingless bee, that spendeth his time in gluttony and idleness. For howsoever he brave it with his round velvet cap, his side gown, his full paunch, and his loud voice, yet is he but an idle companion, living by the sweat of others' brows. He worketh not at all either at home or abroad, and yet spendeth as much as two labourers: you shall never find his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noise, as though he

would do some great act; but it is only for his pleasure, and to get him a stomach, and then returns he presently to his cheer."

It has been often discussed whether a country can be overstocked with bees; we believe this is quite as certain as that it may be over-peopled and over-manufactured. But that this is not yet the case with regard to Britain, as far at least as bees are concerned, we feel equally sure. Of course it is impossible to ascertain what number of acres is sufficient for the support of a single hive, so much depending on the season and the nature of the herbage; but, nevertheless, in Bavaria only a certain number of hives is allowed to be kept, and these must be brought to an establishment under the charge of a skilful apiarian, each station being four miles apart, and containing 150 hives. This is centralization and red-tapery with a vengeance! A story is told, that in a village in Germany, where the number of hives kept was regulated by law, a bad season had nevertheless proved that the place was overstocked from the great weakness of all the stalls in the neighbourhood. There was but one exception. This was the hive of an old man, who was generally set down as being no wiser than his neighbours, and this perhaps all the more, because he was very observant of the habits of his little friends, as well as careful in harvesting as much honey as he could. But how came his hive to prosper when all the rest were falling off? His cottage was no nearer the pasture. He certainly must have bewitched his neighbours' hives, or made "no canny" bargain for his own. Many were the whisperings and great the suspicions that no good would come of the gaffer's honey thus mysteriously obtained. The old man bore all these surmises patiently; the honey harvest came round, and when he had stored away just double what any of the rest had saved, he called his friends and neighbours together, took them into his garden and said—"If you had been more charitable in your opinions, I would have told you my secret before—

This is the only witchcraft I have used:" and he pointed to the inclination of his hives—one degree more to the east than was generally adopted. The conjuration was soon cleared up; the sun came upon his hives an hour or two sooner by this movement, and his bees were up and stirring, and had secured a large share of the morning's honey, before his neighbours' bees had roused themselves for the day. Mr. Cotton, who gives the outline of the story which we have ventured to fill up, quotes the proverb that "early birds pick up most worms," and draws the practical moral, in which we heartily concur, that your bed-room window should always, if possible, face the east.

In an arable country, with little waste land and good farming, very few stocks can be supported; and this has led some enthusiastic bee-masters to regret the advancement of agriculture, and the consequent decrease of wild flowers—or weeds, according to the eye that views them—and the enclosure of wastes and commons. Even a very short distance will make a great difference in the amount of honey collected. We know of an instance, where a bee-keeper at Carshalton, in Surrey, suspecting, from the fighting of his bees and other signs, that there was not pasturage enough in the immediate neighbourhood, conveyed away one of his lightest and most worthless hives, and hid it in the Woodmansterne furzes, a distance of about a mile and a half. Fortunately it lay there undiscovered, and on removing it home, he found that it had become one of his heaviest hives. We mention this as a case coming under our own knowledge, because a late writer, who has shown rather a waspish disposition in his attacks on Mr. Cotton's system, seems to question not only the advantage, but the practicability of the transportation of hives altogether. But the fact is, that in the north of England and in Scotland, where there are large tracts of heather-land apart from any habitation, nothing is more common than for the bee-masters of the towns and villages, to submit their hives during the honey season, to the care of the shepherd of the district. "About six miles from Edinburgh," says Dr. Bevan, "at the foot of one of the Pentland hills, stands Logan House, supposed to be the residence of the Sir William Worthy, celebrated by Allan Ramsay, in his "Gentle Shepherd." The house is at present occupied by a shepherd, who about the beginning of August, receives about a hundred bee-hives from his neighbours resident beyond the hills, that the bees may gather honey from the luxuriant blossoms of the mountain heather." Mr. Cotton saw a man in Germany who had 200 stocks, which he managed to keep all rich, by changing their places as soon as the honey season varied. "Sometimes he sends them to the moors, sometimes to the meadows, sometimes to the forest, and sometimes to the hills." He also speaks of its being no uncommon sight in Switzerland, to see a man journeying with a bee-hive at his back.

THERE are cases in which a little common sense is of more value than a great deal of calculation.

From the Tennessee State Agriculturist.

Improve your Home, &c.

Is it not the desire of all parents, that their children should love home? if so, beautify and adorn your homes, so as to make them the most pleasant and loveable place to them.

"The spring time is coming," the season when dame nature decks herself in her gayest attire, and all things living, seem endued with new life and vigor. Begin then with nature; she will lend you kind assistance; plant trees, fruits and flowers, tend, work and water them, let your children assist you, give each his portion in the labour of love—who that ever planted a flower, and watched it from the time of putting the unsightly root into mother earth, to the first peeping forth of the green leaf, to the full expansion of its beautiful bloom, but looks back with pleasure on his sensations of delight and exultation, as he culled it for the one he loved best? How his face glowed and his heart beat, as he eagerly displayed the prize! Who can walk in the garden at dewy eve or rosy morn, inhaling the delightful perfume rising as incense to the Giver of all good, from every bud and flower, and not feel his own heart lifted up in praise for so many blessings? The mind is naturally led to harmonious reflections, by contemplating nature in her most alluring forms. Adorn your homes then with all her choice productions, so that in after life, when your children are surrounded with care and trouble, home will rise up as a green spot in memory's waste. Let your children share your pursuits, it will make them love home better, more affectionate toward each other, and give them more confidence in you; they will find there is indeed "no place like home;" instead of an irksomeness and reserve in your presence, they will feel confidence, and consider you their best friends and companions.

Are not the Swiss and Scotch attached to their wild, rugged, and often barren country, more than any other people? It is because they bestow more labour on it, they toil incessantly in tilling the earth, and feel more affection for that spot. In most countries, the great struggle is, to keep the homestead from generation to generation, while we still continue the "squatting" propensities of our forefathers; our children, like a flock of birds, leave us as soon as fledged—not but I would have them independent, have them so by all means, and to have them so, I would do away the great love of speculation, the making haste to be rich, the effects of which so many are sinking under at this very time: and make our boys *quiet, sober* and *intelligent* men, our girls *well informed*, cheerful, healthy, amiable and affectionate. If you wish your boy to be a good son, good brother, good husband and good man, make him love home, it will also deliver him from the manifold temptations that beset a young man's path—he will, by sharing his mother's and sister's pursuits, acquire a greater interest in them, and have a more affectionate regard and greater sympathy with them; it will rub off the rough points of his character, refine and polish him, strengthen and exalt the mind of the sister, add ease and grace to their deportment with the rougher sex. By making home agreeable, you heighten the affection of your children for yourselves, and prevent their seeking enjoyment and amusement elsewhere—you will have them more under your parental eye, and thus be able to check many an embryo fault kindly and gently, which, if left unrestrained, would wring many a tear of anguish from your hearts. Has not the Father of *all* made this universal garden beautiful and lovely in the extreme? Is it not enriched with all that is pleasant to the eye and grateful to the taste; even every thing that the heart of man can desire, to make this, our temporary home, a paradise; and shall we not follow such a glorious example, and make the transient home of our children pleasant and sweet. By adorning and making them pleasant within and beautiful without, they will in truth say, "there is no place like *home*."

Aunt Charity.

Franklin, Jan. 1843.

For the Farmers' Cabinet.

Salt for Grub Worms.—A correspondent of the New Genesee Farmer says, that after finding the grub worm was cutting off his corn and cabbages at a sad rate, he first applied ashes, then soot, and then Scotch snuff to the hill, hoping to destroy or drive away the worm, but it was all to no purpose. Afterwards, seeing it stated that *salt* was very disagreeable to the grub, he applied about two table spoonfuls to each hill of corn or cabbage, placing it so as not to touch the plant. The worms left them immediately.

Another says, that by putting about "a pinch" of salt to each plant, two or three times, the worm ceased his depredations. He also mentions a neighbour, who watered his cabbages daily with water from a salt pork barrel, and was not troubled; but as soon as he discontinued the practice, his plants were attacked, equally with his neighbours.

L.

For the Farmers' Cabinet.

Root Culture.

The cultivation of roots is one of the modern improvements in agricultural science: they double the amount of provender and treble the amount of manure, and afford a healthy and succulent food that is eagerly sought after by cattle. They meliorate their condition, and would serve to soften the rigors of winter in the peculiar satisfaction which cattle manifest after feeding, and anxiety to obtain them. One acre to roots, will yield green food enough to winter as many animals as four acres of grass would do, estimating the yield to be from one and a half to two tons per acre.* The revolutions in husbandry that have followed the introduction of root culture, have been of a permanent character, and which it would be impolitic to dispense with; for while it has already materially aided in perfecting the system of agriculture in those countries where it has been longest known, it is apparent that to its influence we owe a more perfect one in our own. Germany has long felt the importance of the turnip; and the beet culture of France now furnishes annually one hundred million pounds of sugar for human consumption; while the refuse of the beet gives the French the best of beef and mutton, a luxury it is said but seldom enjoyed before the introduction of the sugar-beet. Again, the culture of the carrot occupies a large share of the attention of the people of Flanders, a people known extensively for the skilful management of their agricultural concerns. Their husbandry too, enjoys a more elevated reputation for profitableness, than that of any other country. In Great Britain, the introduction of root culture is considered as important to husbandry, as the application of steam to the manufacturing art. The praise of English beef is due to the turnip, a luxury highly extolled, and of which John Bull vauntingly boasts. In confirmation of what is here said, the following remarks from the New Edinburgh Encyclopedia, are offered: "The introduction of turnips into the husbandry of Britain, occasioned one of those revolutions in rural art, which are constantly occurring among husbandmen; and though the revolution came on with slow and gradual steps, yet it may now be viewed as completely and thoroughly established. Before the introduction of this root, it was impossible to cultivate light soils successfully, or to devise suitable rotations for cropping them with advantage. It was also a difficult task to support live stock through the winter and spring months; and as for feeding and fatting cattle and sheep for market, during these inclement seasons, the practice was hardly thought of, and still more rarely attempted, unless when a full stock of hay was provided, which only happened in a few instances. The benefits derived from turnip husbandry, are therefore of great magnitude: light soils are now cultivated with profit and facility; abundance of food is provided for man and beast; the earth is turned to the uses for which it is physically calculated; and by being suitably cleaned with this preparatory crop, a bed is provided for grass-seeds, wherein they flourish and prosper with greater vigor than after any other preparation." J. N. Keeler.

Feb. 19th, 1843.

* It is scarcely necessary to observe, that we would ever wish our readers to remember, that we are not responsible for the opinions of our correspondents.—Ed.

For the Farmers' Cabinet.

Gate-posts and content of corn-cribs.—Farmers often want to know how much corn they have in their cribs, or how much grain they may have in the bins in their granaries. To do this, they have only to level the grain on the top, multiply the length of the crib or bin, by its width, and this again by its depth in feet and inches. This will give the content in cubic, or solid feet. Now as there are 1728 cubic inches in a foot, and 2150 in a bushel, we perceive that it takes just about five cubic feet to make four bushels. From the number of solid feet then, in a crib or bin, subtract one fifth, and you have the content in struck bushels, very nearly. If the crib is not of equal width, take the mean width: and if the corn be in the ear, about one half will show the number of bushels of shelled corn.

There is often considerable difficulty in preventing the post to which a gate is hung, from swagging or leaning towards that against which it shuts. I have discovered a simple remedy; and that is, instead of selecting a straight stick for a post, select one that has a considerable crook, or angle at the surface of the ground when set. The post then being properly placed in the ground, with the bottom pointing in a direction towards the post, against which the gate is to shut, its crook or angle will counteract the tendency of the weight of the gate to draw the post over towards itself, and thus prevent the leaning that is often so troublesome. S. M. S.

Staunton, Del.

For the Farmers' Cabinet.

Lime.

Messrs. Editors,—Your correspondents on both sides of the question, seem to admit that an over dose of magnesian lime is hurtful to vegetation for a season; which appears to be about as much as we are to expect in the way of agreement; but it must not be supposed, that no good has been derived from the agitation of the subject in the pages of the Cabinet—I for one, have reaped much information, and have been led to think and to act upon it, with the expectation of deriving pleasure as well as profit from the labour of our intelligent friends. And in the mean time, I would copy for insertion in your pages, the following short, but very seasonable and highly judicious remarks, from an article on the same subject, contained in the second volume of "Memoirs of the Philadelphia Agricultural Society, by John Lang." The writer observes:

"It will be admitted, that all animal and vegetable matter contained in the soil, must undergo a decomposition by some means or other, so that being thereby reduced to such a state as to be easily soluble in water, it may be absorbed by the roots of plants; and that these roots naturally possess, to a considerable degree, the power of producing this decomposition, I have had occasion more than once to observe, in the case of planting potatoes with woollen rags instead of dung. I have seen fine crops raised, merely by dropping a small piece of woollen rag, not larger than the hand, with every set of the potatoe; and have observed, when the potatoes were gathered in the fall, that in every instance where a potatoe plant had failed to vegetate, the rag was turned up almost entire, and very little wasted by being buried under the ground; whereas, not the smallest vestige of a rag was to be seen, where the plants had grown to perfection.

"But there are other animal and vegetable substances, which require more powerful solvents to prepare them for the food of plants; such substances, therefore, must be decomposed, either by means of the putrid fermentation, or by the application of hot lime, &c.; but while the putrid fermentation is going on, it is exceedingly noxious to vegetation, as we may see by the bad effects of putrid or stagnant water upon the roots of tender plants; while, on the other hand, hot lime will check the progress of putrefaction, and at the same time very quickly effect the decomposition of various bodies; thereby preparing sweet and wholesome juices, whether they consist of carbon, phosphorus, oils, or alkali; or compounds of all or either of these. And I conceive, if the lime meet with a sufficient quantity of such substances, as it in this manner acts upon, it will, by mixing with them thus prepared, be thereby deprived of its caustic quality, in the same, or somewhat similar manner, to that whereby magnesia or chalk, blunts or sheaths the points of the sharp particles of acids. But if the lime does not meet with a sufficient quantity of carbonic, or other matter in the soil to act upon, so that its caustic quality may be overcome, then, in such case, it will act upon the tender roots of the growing plants, in the same manner as it acts upon grass or other vegetables, when laid in heaps upon the surface: and this, in my opinion, is the cause why lime, in some instances, is hurtful, instead of being beneficial to land. Upon the whole, therefore, instead of troubling ourselves about distinguishing the different qualities of *magnesian* and *calcareous* lime, it would be better to use lime sparingly on poor land, and at the same time, to use every exertion to increase our dung and compost heaps, whereby our land will be prepared for the application of lime, not only with safety, but to great advantage."

In conclusion, I have now before me, a field of five acres, which, three years ago was *poisoned*, by having a very thick covering of magnesian lime spread upon it, although it was well worked into the soil and seeded, unaccompanied by any other crop, with a variety of grass seeds; the sod becoming thickly covered with dwarf or sheeps-sorrel, exceedingly to the annoyance of the owner; but which has been completely recovered, by a very thick coat of rich dung, repeatedly brushed into the sod; the herbage the present year, being very fine and sweet, and yielding three cuttings of great luxuriance, for the soiling of cattle. P. S.

Bucks co., Nov. 15th, 1842.

The business of husbandry brings men acquainted with the condition and mystery of all inland trades, inasmuch as they all depend on and have relation to the plough, in which all interests are interwoven; nor can a discouragement fall on husbandry, occasioned either by bad seasons or untoward circumstances, but the artisan, the merchant, and even the sovereign on his throne must feel it.

If gentlemen would use such methods to attain a skill in husbandry, as they do to become masters of any other art or science, they would soon find an entertainment in it, not unworthy the most exalted genius.

For the Farmers' Cabinet.

An economical Boiler.

While on a visit to Mr. John Kirkbride, at Morrisville, Pa., I saw a boiler, which is, I think, admirably adapted to the uses of a large farm, where the system of cooking food for cattle is followed. It is remarkably simple in its construction, and on a principle which must tend greatly to the saving of fuel. It consists of a stout and long wooden box, through the end of which, and within about an inch of the bottom, an iron or copper pipe enters and passes to the other end; it then turns by an elbow, and again traversing the bottom of the box, passes out at the end at which it entered, leaving a space of a few inches between the two openings. The pipe is larger at its entrance than its exit, and is kept firm, steady and water tight, by flanges well nailed around, on rings of cloth and putty. In the largest mouth of this pipe the fire is made, either of light wood, corn-cobs, &c., and a strong current of air passing in with it, the flame is carried through the pipe with the greatest velocity; the smaller end of the pipe serving the purpose of a chimney for the smoke. Thus the water in the box comes into close contact with the fire-pipe on all sides, the double length of the box and the return elbow at the end; and nothing intervenes to rob it of the force of the fire; nor is there any fear that the end of the box will suffer from it, as sufficient water will be found between the box and the pipe, to quench the heat and prevent ignition. The box may be about six feet long, three or four feet broad, and two feet deep.

Now, as I find that our friend Henry Chorley, of Scott farm, grows his corn-stalks so large, that he cannot find a box with knives sufficiently strong to cut them before steaming, I would recommend him to reverse the order of procedure; put up a couple of these box boilers, cook his corn-stalks *first*, and cut them *after;* and I think I might promise him double the benefit he now derives from the use of his steaming apparatus. By these means he would provide a vast quantity of capital swill for his dairy cows; for I would propose, that the liquor in which the stalks are boiled, should be let off from the boxes every time they are used, and be preserved for the purpose in a cistern; and this is to be done before the stalks are removed, preparatory to the reception of another batch of them. And if in the water there be mixed a few pounds of molasses, and as soon as it boils, a few pounds of corn and cob meal—first mixed with a little cold water—by way of thickening—not a particle of either being lost during the cooking by evaporation, a *porridge* would be formed, the best and cheapest food that could be devised for dairy cattle, calculated to produce an extraordinary flow of the sweetest milk. And no business could be more conveniently performed; it would only be for the boy to cut off with a sharp hook the top of each corn-stalk, which would form capital dry feed for the cows; place the stalks in the box straight and close, so as to make it contain as many as possible; put on the cover and light the fire; and while these are boiling, he may be unloading the other boiler and fresh packing it, preparatory to another cooking.

It has been said, that food when slightly acidulated, is best for cattle of every description—here then, will be an opportunity of fermenting the swill to any degree required; it is only to add a little yeast to the contents of the cistern, when reduced to a proper degree of temperature. Or if it be thought preferable to prevent fermentation altogether, it is but to sprinkle a little dust of lime and stir it up.—See an article on the antiseptic properties of lime, page 29, of the sixth volume of the Cabinet. J. C.

Bucks co.

The Silk Culture.—We copy the following paragraph, says the American Farmer, with unmingled feelings of pleasure, because we believe that the success of the experiment detailed therein, will exert a wholesome influence in favour of this branch of industry.

"*The Silk Culture.*—At a recent Agricultural show and fair in Fredericksburg, Mr. Rees Jewry, of Culpepper county, exhibited a specimen of silk fabrics manufactured by his daughters, who also superintended the cultivation of the silk.

"The articles produced from rather less than 10 bushels of cocoons, were as follow:

12 Yds. of cloth (from floss silk) value	$7
18 Handkerchiefs—sold for	81
8 Reticules,	16
4 Purses,	2
1 Shawl and 1 veil, valued at	10
Total,	$116

"Mr. Jewry has on his farm a plantation of mulberry trees, which is managed by his daughters, and he gives it as his opinion, that the proceeds of his cocoonery will amount, when in full operation, to more than his entire crops of wheat and corn. His establishment is capable of producing annually, 80 to 100 bushels of cocoons. This is decidedly encouraging to the silk enterprize."

From the Cultivator.

Peach Trees.

Many old men, not in the habit of committing their thoughts to writing, are possessed of much useful knowledge, which should be gathered up and recorded by their juniors. My grandfather, Ralph Voorhees, of this town, has long been a most successful cultivator of peach and plum trees; and from information derived from him, I select for publication a few hints, together with some particulars obtained from other sources.

Peach stones should be buried in the fall, in dry ground; cover them slightly; freezing is no injury. In the spring dig them up, crack them, but leave the pits within the shells, as this is most according to nature, and so plant them. If the stones are not cracked when planted, they may not vegetate until the second year; and indeed, my informant has known them in one instance, to lie half a dozen years before coming up.

July, though a good time for inoculating plum trees, is too early for the peach. If peach trees are inoculated in this month, every rain causes the wound to send forth a quantity of gum, which becomes hard, and is hurtful to the buds. This evil will be diminished, if the operation is deferred until August, or what is still better, the early part of September. Set the buds on the north side of the tree; the sun will not be so likely to dry them up. Mr. Voorhees still adheres to the old notion, that the bark separates more readily from the wood at the full moon, and that this, consequently, is the best time for inoculation. Apricot buds may be set on plum trees with success. Such a tree, inoculated about ten years since, is now standing in this vicinity, and is still in thrifty condition. Last year it was loaded with apricots, which sold here in the country, at the rate of four dollars per bushel.

Peach trees, in this region, are much infested by ants. These insects gnaw the bark, producing a flow of gum; they also gather upon the leaves, cause them to curl up, and turn yellow, thereby hurting the growth of the tree. I should like to hear whether the same plague exists elsewhere.

Urine thrown frequently around the bodies and roots of the trees, is a powerful stimulant to their growth, and preserves them in a great measure from the worm. Mr. Voorhees treated his trees in this manner last year; and among the whole number, consisting of about fifty, but one worm was detected during the season; nor were the ants so troublesome as formerly. Some persons cover the base of the tree with tar, and no doubt it is serviceable against both worms and ants. I believe the ravages of the worm may be prevented in a variety of ways, without resorting to the plan recommended in recent papers, of setting vermifuge plants, as tansy or wormwood, around the trees. It is worthy of inquiry, whether wormwood used for this purpose, would not be highly prejudicial to the growth of the tree, as this plant is noted for its power of draining the soil of its potash, an ingredient exceedingly useful to fertility. It is better to keep the earth for some distance around the trunk, clear of weeds, grass, and all living plants; and when young trees are set out, the ground should be kept under cultivation several years afterwards; for which purpose, one of the crops best adapted, is potatoes.

A. R. McCord.

La Grange, Dutchess co., N. Y.,
Feb. 1st, 1843.

Education.

It seems to be universally conceded, that as scholars advance in years, they can apply their minds for a longer period to a specific subject. Little children are incapable of long continued application to the same thing. Their attention flits from point to point. As their hand seizes quickly upon an object, and as quickly loosens its grasp,—as their feet bound from the earth as soon as it is touched,—so their minds catch single glimpses of one subject, and with the volatility of a humming bird, fly to another. The whole organization—mind, brain, and limb,—vibrates to the pulsations of the heart, which are rapid, but weak. But with the advance of time, and with the repetitions of exercise, the power of concentration strengthens. As the mind becomes more mature, it pursues its investigations longer at once, and with a speed accelerated in the ratio of the time. It seems to perceive, almost intuitively, that it would lose momentum and headway by an interruption of the continuity of thought; and, therefore, it adheres to the same train of ideas more tenaciously, and for a longer period. Yet, notwithstanding the obviousness of these principles, it is a general fact, in regard to all our schools, that the younger scholars have far less variety and change in their exercises than the older. A monotonous course is enforced upon the young mind while it is quick and volatile; but as its power of concentrating itself upon any given subject increases, it is subjected to the dispersive influence of rapid changes. It must be a great reformation which will remedy this defect in our schools, and it is one imperatively called for.—*Com. School Journal.*

Lancaster County Lime, &c.

We have at length experienced in reality, the enjoyment which had been anticipated in a visit to our agricultural friends in Lancaster county, to its fullest extent; but it would be difficult to describe the magnificent establishments in that English county, as it has been termed, or the hospitality of their noble possessors. With a soil teeming with fruitfulness, and a general appearance of ease and competency amongst its cultivators, the valley of the Pequea may be considered the garden of that highly favoured district of country, "beautiful to look upon." A sojourn at "Prospect Hill" and "Spring Lawn," has abundantly testified to the truth of this position, and many will be the occasions of turning to it for reflection and comment, in our future labours.

But all other observations have been absorbed, as it were, for the moment, in the striking fact, that the present unexampled fertility, in reality as well as in appearance, is to be attributed in a great measure, to the free use of lime; and of lime too, that is highly charged with magnesia! without a single instance of its having produced the slightest deleterious effect, even when applied to an unlimited extent; its operations being only good, and that continually. We say to an *unlimited* extent, and we speak advisedly; for on part of an old meadow, divided only by a rail fence, the owner, W. P. Kinser, Esq., applied lime on the sod at the rate of 500 bushels per acre; and the result has been, a far superior growth of grass, both in quantity and quality, compared with the other part of the field; although that has been heavily dressed with stable-yard manure; while on several large heaps of effete lime that have been deposited near the kilns, green grass and clover are vigorously forcing their way through a covering of lime, two and three inches in thickness; which quantity may be safely calculated at about 2000 bushels per acre. This lime is burnt by Mr. Kinser, from a rock immediately adjoining his house; and he showed us a fence-row, where he had spread lime at the rate of 600 to 1000 bushels per acre, to destroy the Canada thistle; with what probable success may be calculated upon, from the fact that the grass and clover on that spot are far more luxuriant than on the land adjoining, although the lime lies in many parts more than an inch in thickness.

We were once largely engaged in Wales, England, in burning lime for agricultural purposes, from a black marble rock, which exhibited, on analysis, 98 per cent. of carbonate of lime, and were accustomed to spread it on primitive grass sod, to the amount of 500 to 1000 bushels per acre; from which, however, vegetation would spring up as from a dressing of dung —this effect always being attributed to the purity of the lime. Thus the face of that part of the country has been completely changed; yielding at the present time, white clover and the fine grasses indigenous to a limestone soil, in the greatest luxuriance; but we are prepared to say and to show, that never did we witness more beneficial results, with a more perfect absence of all deleterious quality in the Welsh lime, than in that which is furnished from the inexhaustible bed of stone, immediately adjoining the house at Spring Lawn, where three large kilns are now in full operation: and from all inquiry and observation, it would appear, that in every instance the most beneficial results have followed its application; no one ever entertaining an idea that any, even the most partial evil, can possibly arise from its use, to any extent; although, as has been said, it is known to contain magnesia in considerable proportion—how large, perhaps Mr. Kinser will be pleased to inform our readers.

Here then, is fresh ground broken for our friends, magnesian as well as anti-magnesian! It is no longer necessary for the former to urge restraint in its use, with the view to prevent injury; and to endeavour to show, that "a small quantity of magnesian lime is equal in its fertilizing effects to a larger proportion of that which is pure," and "presuming that the injury complained of, might arise from the poverty of the soil," &c.; they may now send the "question begging," and point to the Pequea lime, with all its magnesian impurity, as a *fertilizer*, when applied to all soils, and to the most unlimited extent. But since it is quite as certain, that other lime, containing, perhaps a less proportion of magnesia, has been productive of the most seriously evil effects in other parts of the country—of which too, we ourself have been witness—there will still be ample space for examination of the subject in our pages, with the view to discover, if possible, whether, after all that has been said, the evil is not inherent in the soil on which the lime has been applied, and not in the lime itself, magnesian although it might be. In short, whether there may not be a substance, or a *circumstance* if you will, contained in the soil, which the application of magnesia may render deleterious. The most satisfactory experiment would be, to dress one half a field with other lime, known to possess injurious qualities, noting its quan-

tity of magnesia, and the other half with Spring Lawn lime, noting its proportion of magnesia also; using both in excess, say at the rate of 500 bushels per acre. In our estimation, the man who would undertake such an experiment, would *deserve* a *golden plough* and the gratitude of the agricultural community; and yet, how easily might it be accomplished by a few enlightened friends conveniently situated in both districts! We fancy that we see our excellent and intelligent friend, Mr. Kinser, at the head of such a patriotic band of citizens, and already employed in the enviable task! With his broad-wheel wagon of 100 bushels, and his magnificent team of horses, he could soon accomplish his share of the labour.

J. PEDDER.

April 27th, 1843.

P. S. At p. 142, vol. 2, of the Cabinet, is the following observation by Mr. Daniel Buckley, of Salisbury, the person mentioned by Mr. Van Leer, as having spread plaster with a shovel, at the rate of 25 or 30 bushels per acre. As in all probability the lime he speaks of was obtained from the quarries now used by Mr. Kinser, they being within sight, the testimony borne to its perfectly harmless character when used largely, comes well in place for corroboration. He says, "there are good farmers who differ as to the quantity of lime that is most profitably applied; some say 60 bushels per acre, some 70, and some more. I have applied 100 bushels on an acre of limestone land at a dressing, but have not been able to discover any benefit in using it thus freely, *nor any injury*, except in the loss of the lime."

DEAD ANIMALS.—By covering dead animals with five or six times their bulk of fresh soil, mixed with one part lime, and suffering them to remain, their decomposition would impregnate the earth with soluble matter, so as to render it a most valuable manure, which might be applied in the same way as other manures to crops.—*Davy.*

It is recommended not to allow the lime to come in contact with the carcass, else the decomposition would be retarded. The lime may be spread over the surface of the heap of earth, where it would imbibe the gasses as they evolved during the decomposition of the dead animal; that having ceased, then the whole mass may be turned over together; and after a season, the compost may be carried abroad as a dressing of superlative value. It is said, in France the value of a dead horse is oftentimes far greater than that of a living one.

For the Farmers' Cabinet.

Fencing.

MESSRS. EDITORS,—Believing that few matters are of more importance to the community—whether farmers or others—than the economy of "Fencing," I was exceedingly pleased with the suggestions of your correspondent, the "Old Farmer, of Salem," in your last January number.

Upon inquiry, it appeared the half inch iron rod of four feet and a half in length, would weigh above three pounds—at least so said my steel-yards—and could not be procured in Baltimore, our most convenient market, at less than five cents per pound, making the cost of each bar from 15 to 17 cents, instead of seven, as stated by your correspondent.

This being a most material item in the cost of each panel, I must ask the favour of your correspondent, or of "J. P.," who says in your last February number, he has tried it, or any kind friend capable of giving the information, to tell us where such rod iron can be purchased at the price stated. My decided impression is, that if the iron can be purchased for seven cents, at a place from which it can be conveniently and cheaply transported, this species of fencing will be adopted to a considerable extent.

Allow me, while on the subject, to suggest whether a slight *clinch* or *rivet head* on the lower end of the bar, with a perforated piece of sheet iron or tin, in the nature of a *washer*, may not be the cheapest and best mode of arranging the rod. It will then lay flat upon a stone or other substance placed under it, and by a very little labour the rod may be prepared with this rivet head, before taken to the field. CHESTER.

Kent co., Md., March, 1843.

UPON inquiry, we learn that ⅜ or ½ inch iron rods may be obtained in this city, at about five dollars per cwt.—ED.

TO DESTROY THISTLES, FERN AND COLTSFOOT.—Having once a pasture field that seemed one entire bed of common thistles, and having occasion to carry manure across it to another field, I observed all the thistles completely killed wherever the carts went. I therefore set to and rolled the whole field with a cast-iron roller, once in the latter end of May, and twice in the beginning of June. The field has been free from thistles ever since. Fern and coltsfoot I have exterminated in the same way.—*London Horticultural Register, for August* 1831.

LET every man mind his own business, and then every man's business will be attended to.

For the Farmers' Cabinet.

Thorough Culture of the Soil.

It has been said, that out of thirty seeds that ought to start soon after the time of sowing, not more than one will be found at the time of harvest. Now, although this statement might be considered as exaggerated, yet to a careful observer, the real matter of fact will be astounding. Many have been the opinions of agriculturists on this all-important subject, and the extreme paucity of plants on the ground, that is often witnessed in early spring after a severe winter, would lead one to believe that the general opinion, namely, that the killing out of the crop has been occasioned by the unkindly state of the winter weather, is correct; but in that invaluable little work, "Bland's Principles of Agriculture," a flood of light is thrown open to us, by which I believe the evil will be perceived to arise, in a very great measure indeed, from a far different cause—a cause that has hitherto been overlooked by almost every one. On his chapter "Of sowing seeds," he makes the following observations, which I beg you to record in the pages of the Cabinet, for future reference.

"The principles to be attended to, are, that the seed, of whatever description, should have the soil made sufficiently close, yet tender, about it, to prevent any circulation of fresh air, beyond what the effects of vegetation may occasion; for if it lie so close as to establish a complete exclusion of all fresh air, which always ensues on land that kneads on treading—a *stand-still* is the consequence. But on the other hand, should the soil lie loose about the grains or seeds, the proportion of air proves too great for decomposition, when dryness is favoured; and from this other extreme, vegetation continues dormant until some genial closing showers fall; when, perhaps by chance, vegetation may go on healthily; but it is too apt to cease afterwards, in part or altogether; and this is one cause of the thinning of our crops. The soil, in fact, must be close enough to retain its air and moisture in immediate contact with the grains, or they cannot be healthily decomposed for the benefit of the seed, and which process must necessarily take some time; but when any part is accomplished, the disengaged and rejected portions should be able to escape, to make way for fresh particles, which interchange is, as before stated, materially promoted by every subsequent shower.

"Now we see, on looking over fallow land, not dressed down with the harrow after ploughing, how few seedling weeds are to be found springing up; and this is, principally, from the cause above given; but when this fallow land is closed by repeated harrowings and rollings, even if no rain follow, germination commences; thus pointing out, most clearly, the propriety of adequate attention being paid to tillage *before*, as well as *after* the grain is committed to the ground; with the prudence of deferring, for a few days, the sowing and finishing of that field, which should plough up too wet to bear the process of pulverization immediately. The kneading of the land, which so frequently occurs at the season of wheat sowing, is removed, and the ill effects counteracted by the winter's frost; but it must be borne in mind, that the smaller the seed and the later and drier the time when sown, the finer ought to be the tilth; and the turnip is an instance.

"If we examine a few facts of vegetation, we shall find them as follow:—Grain, in a wet harvest, and when tied in the sheaf, is first detected growing or spearing, about the band; next, amongst the ears where collapsed together; and the evil is remedied by simply loosening the one, and separating or spreading open with the hands the other, to admit of a circulation of air, which arrests all farther vegetation, till more rain falls to closely reunite them again; and the same follows with mown wheat or barley, when the ears are permitted to remain in contact with the ground, during a series of warm showers; but lightly lifting them up and letting them fall again, or turning them over, effectually preserves the crop, if it be done and repeated in time. And here follow cases analogous to the above—boards or timber, when fresh sawn out and put close together, will soon generate the dry rot, if pieces of wood or other substance, are not placed between each board or piece of timber, of sufficient thickness to admit a free circulation of air. Damp paper and damp linen also, will exhibit marks of the same evil as those boards, and if long neglected, they will be completely destroyed; as the air, being retained, is decomposed; when the destructive or vegetating process commences; and like a fire it burns."

The author's observation, that weeds do not grow so plentifully on fallowed land until it has been dressed down with the harrow, &c., is worthy our most serious consideration, and forms an argument for the new husbandry over the old—the difference between them being this, that the *old* system went upon the plan of preventing the weeds from growing; the *new*, of encouraging them to grow, that they might be turned down and destroyed by the plough—which

is far above all price; for it puts into our power the means of completely ridding our crop of weeds, it being only to plough and harrow for them when no crop is on the ground; and if we could be brought to consider that a weed half an inch in height, is as much a *weed* as is one of half a dozen feet in height, and that the eradication of the one is equal in importance to that of the other, the labour of keeping our crops clean would not be a tenth part so great as now. On remarking to a friend the other day, that his last year's corn land was particularly clean, he replied, "my corn land is always clean; for so soon as I can see the weeds, I am at them, and never allow them time to grow to great ones; if I did, 'twould be all over with me; one or the other of us must be master, and I find it but very little labour to destroy the weeds, if I take them in time —a weed is a weed you know, small as well as great." And Mr. Paschall Morris, in his Address before the West Chester Agricultural Society, has given us practical assurance of the fact, that land which has been exhausted of weeds by repeated ploughing and harrowing, before sowing the seed of the beet, turnip, &c., can be afterwards cultivated with far less labour and cost—"a fact worth knowing," and one which we ought at once to put into practice. I am convinced that we do not plough and cultivate our land sufficiently, and that it has been neglected under a false idea, that by over-ploughing we shall impoverish our soils —an egregious error, and one which I am now combating, by cutting across my corn-tilth, which was broken up in the autumn, the turf coming up decomposed, in consequence of its having been totally buried, by being turned completely over by the Prouty or centre-draught plough; for the knowledge of which, and for many other things, I am indebted to the Farmers' Cabinet.

James Godwin.

Schuylkill co., March 14th, 1843.

From the Farmer's Monthly Visitor.

Economy for Farmers.

There are many points of economy which in the course of a single year, much less in the ordinary life of a farmer, would make a very great difference. A difference between dependence and independence, wealth and poverty—the having of a very little farm for each of the boys and girls, or nothing at all. Our superfluities cost us more than our wants, and it is not economy to forego the necessities, the comforts and conveniences of life, for these are all consistent with true economy. And indeed we generally find, that those who attend to true economy, have all the essentials of life about them.

Economy is not found in deprivation, but in sufficiency. Be generous to the land: it will not yield without manure, and this will produce an abundant crop; and this feeds the family well and clothes well. One well fed horse is worth any number of scare-crows, and is more creditable. A place for every thing and every thing in its place, is economy in time and labour. Not less so, is to have all the tools, of the kind best adapted to their use, and always in order. A few minutes spent in grinding the axe in the morning, is well paid for before sun-set. One well fed, well sheltered cow, will give more milk than half a dozen starved ones. The calf is worth more; more butter is made; the milk is of a healthier quality, the children are healthier, and the doctor is not called in.

Liberality to the land is not less essential than it is to the labourer. By it we procure the best workmen, and they are the most profitable to their employers. Like the soil, if well fed and well paid, they are able and bring about more: this also is economy: for a strong man, like a strong and willing team, gets up the hill, when the weak and disheartened stop at the bottom. Liberality sustains, and promotes fore-cast. Take time by the fore-lock, says the adage. Have plenty of seasoned wood prepared; keep the windows whole; this keeps the house warm, the family healthy, the wife good natured. She anticipates her duties, and has time to spend a cheerful evening, knitting in hand.

Do one thing at a time, and once well done, is twice done; this also is economy; and good materials for clothing, well made up, are also the cheapest in the long run. If our farmers would attend to these things, and others that their good sense will suggest, they need not think of going to the far West or South, to seek for bettering their conditions. Our lands are capable of producing far more than they ever have done, and our population and comforts would correspond. We need not look to the monotonous, unhealthy, debilitating, and frequently demoralizing factories for employment; there is yet ample room, and what we cannot buy, we can make for ourselves. Let us then attend to these things; keep our sons and daughters at home or near us. Then with the blessing of Heaven we shall prosper, and at our annual thanksgiving, see our board and fire-side encircled with kindred blood and happy faces.

A Farmer.

The Steam Plough.

THE following account of Heathcoat's steam plough, we take from Chambers' Edinburgh Journal, October 7th, 1837, which credits it to the Mark Lane Express. We do not apprehend it will soon come into general use in this country.—ED.

The plough has but a distant resemblance to that in common use: it is double, that is to say, has two sets of stilts, one set at each end, and each set consists of two handles—it being occasionally found necessary to employ two men to guide the plough. It has, also, two shares, coulters, and mould-boards, together with all the peculiar apparatus applied to this plough; but it may be said to have no beam. The mould-boards are both on one side, set tail to tail, so that the plough acts to and from the machine, without turning round. This plough is most ingeniously constructed for performing the various functions required of it. By means of friction rollers, placed under each end, and which give motion to a crank (simply by the contact of the rollers with the ground,) two sets of apparatus are put in motion, that perform essential offices in the operation of ploughing moss. These are, first, a peculiar action given to a sharp-edged and crooked blade, which is made to traverse against the sharp steeled edge of the coulter, producing the operation of *clipping*, which effectually severs all the roots of the heath carices, and other strong rooted plants, that occur in the line of the cut made by the coulter. Secondly, a similar operation is simultaneously performed, and by the same impulse, with another set of similar instruments, acting under and against the edge of what forms the *share* of the plough; these last separate all the fibrous roots that occur in the sole of the furrow. The form of the mould-boards is such as to turn the furrow-slice completely over, and lay it neatly with the heath surface downwards. The auxiliary carriages move on lines parallel to the road-way of the principal machine—one being placed on each side, and at the proposed distance of 220 yards from the machine. The bands, each of 660 yards in length, pass out from each side of the principal machine, where the ends are secured to one of the machine pulleys, on the respective sides, extend to, and pass round the large pulley of the auxiliary, and return again to the machine. At this point, the plough is affixed to the band, while as much more of the band is coiled round the other machine pulley, respectively, as is equal in length to the distance between the machine and the auxiliaries. The steam engine being now set on, and the second branch of gearing adjusted to act upon the pulley to which the first end of the band is attached, this pulley will coil up the band, causing the plough to advance towards the auxiliary; and, at the same time, the other pulley, which at this time is free to uncoil, will deliver off its portion of the band. When the plough has reached the auxiliary, the motion is stopped; the plough is set to the next furrow, the action of the steam engine on the pulleys is changed, by shifting a clutch from the one to the other, and the pulleys reverse their duty; that which was uncoiling, now becoming the coiler, and so on alternately.

In commencing the reclamation of a bog, a road-way is first to be traced out, in a suitable direction for the proposed operations. This is done by simply forming two drains parallel to each other, and about seven yards apart. The principal machine is launched on this road-way (still retaining its natural surface.) The machine rests on the raw bog, and bears on so large a surface, that its buoyancy is insured. It also consolidates and dries the road-way by its pressure. The machine and auxiliaries remain stationary during the time occupied by the ploughs in taking one furrow; they are then severally put in motion, and made to advance in three parallel lines, in order to keep pace with the breadth of land turned over, and to pull the ploughs accurately straight. The machine is impelled by the engines, and each auxiliary by its attendant man, who also shifts his planks onward, as occasion requires. The machine and its auxiliaries have thus to be moved over a space of eighteen inches only, whilst the ploughs have each travelled 220 yards, and turned over 220 square yards of land, nine inches in depth; in other words, the machine and auxiliaries have only to be moved eleven yards, in the time that the ploughs have travelled five and a half miles, and turned over a statute acre of land. The ploughs perform their work at the rate of two miles an hour, and are subject to very few stoppages, so that eight acres and three quarters, nearly, of bog, would be ploughed up in a day's work of twelve hours; or, taking the average of daylight throughout the year, and making a liberal allowance for hindrances from weather, and other causes, one machine would plough up 2000 acres in a twelvemonth.

The principal machine, together with a six ton load of fuel, weighs about 30 tons; its superficial bearing on the moss is 390 square feet, giving a pressure of 178 pounds on each square foot. Taking the weight of a man at 168 pounds, and the area of his

foot at 30 square inches, he would, in walking, press with a weight at the rate of 806 pounds per square foot, so that the machine has a buoyancy of about 4¾ times that of a man, and could, therefore, travel on much softer soil than red moss, which is considered very wet and spongy. The steam engines of the machine consist of two cylinders each, of 10 inches diameter, with a two-feet stroke, and the other appurtenances of a non-condensing engine, together with a fly-wheel, and, at a regular speed, make 60 strokes per minute. The machine is capable of travelling one inch for every stroke of the engine, or five feet per minute. This velocity is acquired with a pressure of steam equal to four pounds on the inch. The drain on either side of the road-way, supplies abundance of water for the boiler. The flat iron band by which the plough is dragged, is 2⅛ inches broad, and one-sixteenth inch in thickness. The friction of the band, together with the empty plough at the distance of 304 yards, is overcome with a pressure of steam equal to eight pounds on the inch; and when the plough has hold on the furrow-slice, a pressure of 13 pounds is required, making in all, 17 pounds pressure of steam on the piston of the engine, which, after deduction of two pounds for the friction arising from the piston itself, leaves a total effective pressure equal to 15 horses' power. This force is required to work one plough, moving at the rate of two miles per hour, turning over a furrow-slice of 18 inches in breadth, by nine inches in depth. If two ploughs were employed, the force would require to be increased to a pressure of 25 pounds on the inch, equivalent to 25 horses' power, and the plough would turn over a surface of 8¾ imperial acres in 12 hours. The plough weighs 12¼ cwt., is 30 feet in length between the two extremities of the stilts, 10 feet in the length of the sole, which last has a bearing surface of 10 superficial feet, and leaves an open furrow of two feet in width. The consumption of coal required to perform the above operation, is from one and a half to two tons, according to quality, per day. The number of men required, would be as follows:—Two to conduct a plough, one to attend the movement of the auxiliary machine, and one to prepare the end of the furrow next to the machine for the entrance of the plough in the succeeding *bout*. The full complement of men, therefore, for two ploughs, or sets of harrows, &c., would be eight labourers, one engine man, and one boy to assist in the machine.

Honest industry may hope for success.

Results of Spade Husbandry.

At the last meeting of the Lytham Agricultural Society, Mr. Threlfall, of Hollowforth, furnished the following interesting calculations relative to labour performed by the spade and plough.

Mr. Threlfall stated, that he had for some years past turned his thoughts to the subject of giving employment to his poorer neighbours, and had made the experiment of spade labour for the production of oats and Swede turnips, and always found that it offered great advantages over work performed by the plough. He had this year repeated the experiment on two plots of land, each a statute acre, from which he had obtained the following results: from the acre dug by the spade, the production had been 87¾ bushels of oats, of 36lbs. per bushel; from the acre ploughed, the yield had only been 47½ bushels, of the same weight, showing a difference in favour of spade husbandry, to the extent of 40¼ bushels of oats, which were worth £5. Again, from the crop raised by spade labour, he had obtained 389 stones of straw, whereas, from that grown on the ploughed land, the weight was only 222, leaving 167 stones of straw in favour of the spade system. The cost of digging a statute acre, which he had had done between the months of November and March, was 37 shillings; for ploughing the like quantity, the charge would be but 10 shillings, which made a difference of 27 shillings in favour of the plough. He trusted, then, that the statement he had made, would prove so satisfactory as to induce some of those who heard him, to try the spade labour system, and thus be the happy means of increasing the healthful employment of the poor. By this plan they might dispense with the keeping of a portion of their present stock of horses, save the corn which those horses consumed, and possibly, in the end, do away with the necessity of having to send money out of the country to buy corn elsewhere.—*The British Farmer's Magazine.*

It is a great mistake to consider husbandry too narrow and mean an employment for a man of parts and education—is it possible to propose a nobler entertainment for the mind of man, than he would find in the inquiries he must make into the operations of nature? The subject is so vast that it can never be exhausted; for could he live for ages, he might still go forward in his researches, and still make fresh discoveries, that would excite afresh his admiration of the riches of Divine wisdom. Lisle.

Extraordinary Farm Produce.

A VALUED friend in London, has forwarded to us the British Farmer's Magazine, for "Jan. 1843." We take from it the following article, which it credits to the Northern Whig.—ED.

NOTWITHSTANDING all that has been said and written on agriculture in Ireland, and besides the many instances of successful practice in many parts of the country, comparatively little is yet known of the real fertility of the soil, and the great capabilities of this hitherto neglected part of the empire. The people know not the productive powers of their land; for in few instances has a farm been brought, by judicious cultivation, to the highest point of its production. Perhaps the most successful example of the capabilities of land, under proper management, in Ireland, and of the immense crops which can be raised, may be seen on the National Model Farm, under the Board of Education, at Glasnevin, near Dublin. This farm, strictly conducted on the improved system of green cropping and house feeding, contains 52 statute acres, and there are kept on it, during the year, 22 head of cattle and three horses. It supplies, on an average, ninety persons during the year, with farm produce, such as milk, butter, potatoes, and vegetables of various kinds; and furnishes the farming establishment with pork, besides a number of private families with the above articles. A considerable quantity of vegetables are carried to market, and all kinds of grain, which is abundant. There is at present a crop of oats upon the farm, the produce of 14½ British acres. It is secured in eight stacks, and is estimated by the best judges to be equal to the average produce of 50 acres. It stood perfectly close upon the ground, average 6 to 7½ feet in height, the head and ear corresponding; the other crops, potatoes, turnips, Italian rye-grass, &c., of like quality. The manager conducts the farm on his own account; pays £257 7s. 8d. per annum, of rent, besides other expenses, amounting in all, to upwards of £400 per year; and we are informed, and believe, that he realizes a very handsome annual sum from it besides. He labours and manages it almost exclusively by a number of boys, agricultural pupils, and teachers, who are there in training in the science and practice of agriculture. As a test of what land is capable of producing, when brought to its highest point, there are few examples so appropriate as we have in this particular instance; there are, perhaps, more crops raised, more cattle kept and fed, more human beings supplied with the common necessaries of life, more manure accumulated, more employment given, and, in fact, more *money made*, on this spot of land, than on any other farm of the same extent, (conducted on a proper scientific rotation of grain and green crop) in any part of the empire, *or the world*. Did the average land of Ireland produce only one half of the value, according to quantity that is on this model farm, we should hear no more of corn laws, tariffs, or want of employment amongst the people.—*Northern Whig*.

For the Farmers' Cabinet.

Woodlands.

PREVIOUS to the discovery of the inexhaustible mines of coal in the eastern section of Pennsylvania, or before the means for transporting produce to our markets with so much facility and cheapness, were employed, it seemed prudent to preserve large bodies of woodland, to support the immense drains caused by the demand for fuel; and had no substitute been found, the result would have justified such a policy. But no such inducement now exists, as the abundant supply of coal supersedes in a great measure, the use of wood for fuel; the price therefore, of wood, will not probably advance to any great extent.

The objections to keeping a larger supply of wood than may be necessary for home consumption, increase as we recede from market; where the expense of transportation bears a greater proportion to the amount of sale. Where there is a prospect of towns springing up in the neighbourhood, these objections become modified; yet it is a question whether the proceeds from tillage would not yield a greater profit than the uncertain one of a future demand. It is certain that many farmers in Chester and Delaware counties, would have been greatly benefited, had they destroyed large portions of their woods, *without any profit* and at *considerable expense*, twenty years ago, and brought the land into cultivation, instead of retaining it in an unproductive state to the present time. And it is probable the same remark may be made fifty years hence with equal truth. The influence of custom and preconceived impressions is so strong, that even imaginary self-interest will blindly dictate an adherence to former views of the subject, while doubts of the utility of change will operate to their preservation. It is true, there is a gradual diminution taking place, but it will take a long term of years to eradicate the superabundance of wood now on hand. It is not designed to enter into a minute calculation, to compare the benefits to be derived from the one course of pro-

cedure, with the losses sustained by the other. Every practical farmer may estimate for himself the value of his land for agricultural purposes, and its productiveness in propagating the growth of timber. The *use* of money vested in woodland, would generally be found to equal in value the worth of such property at the end of twenty years, without having, in the mean time, received any benefit from the latter.

It is probable the farmer would find it his interest, where convenient to markets of coal, and where the soil is good and ground tillable, not to retain even enough of firewood for home consumption; since the land necessary to supply such a demand, *ad infinitum*, might be rendered more profitable by cultivation, than it would be if left to supply timber for fuel. It may be to the farmer's interest to have a good supply of timber suitable for fencing, on his premises, to save the great expense of transportation from distant places where it may be grown cheaper; but four or five acres to the hundred, are quite sufficient for this purpose, if well set with chesnut and locust; and if not, they may easily be grown in nurseries like fruit trees, from the seed, and transplanted to those places best adapted to their reception. Both the locust and chesnut are very rapid in their growth, as well as durable. When cut in August or September, and made into good and substantial rails, it is said they will last at least fifty years, unless where coming in contact with the ground. Both these trees send up shoots in abundance, which supercede the necessity of replanting.

These observations are offered to the attention of the landholder, who aims at a profitable return for his investment; but if desirable to retain or improve the beauties of a landscape, at the sacrifice of some pecuniary advantage, it is suggested whether that object may not be as fully attained by reducing, in some measure, the present superabundance of wood, and in improving the appearance of the remainder.

Charles Painter.

Concord, March 28th, 1843.

A man cannot be engaged in the offices of husbandry, but many things will come under his observation, from which Divine, moral and philosophical conclusions are so natural and obvious, that to avoid them, he must shut his eyes against the light of the sun.

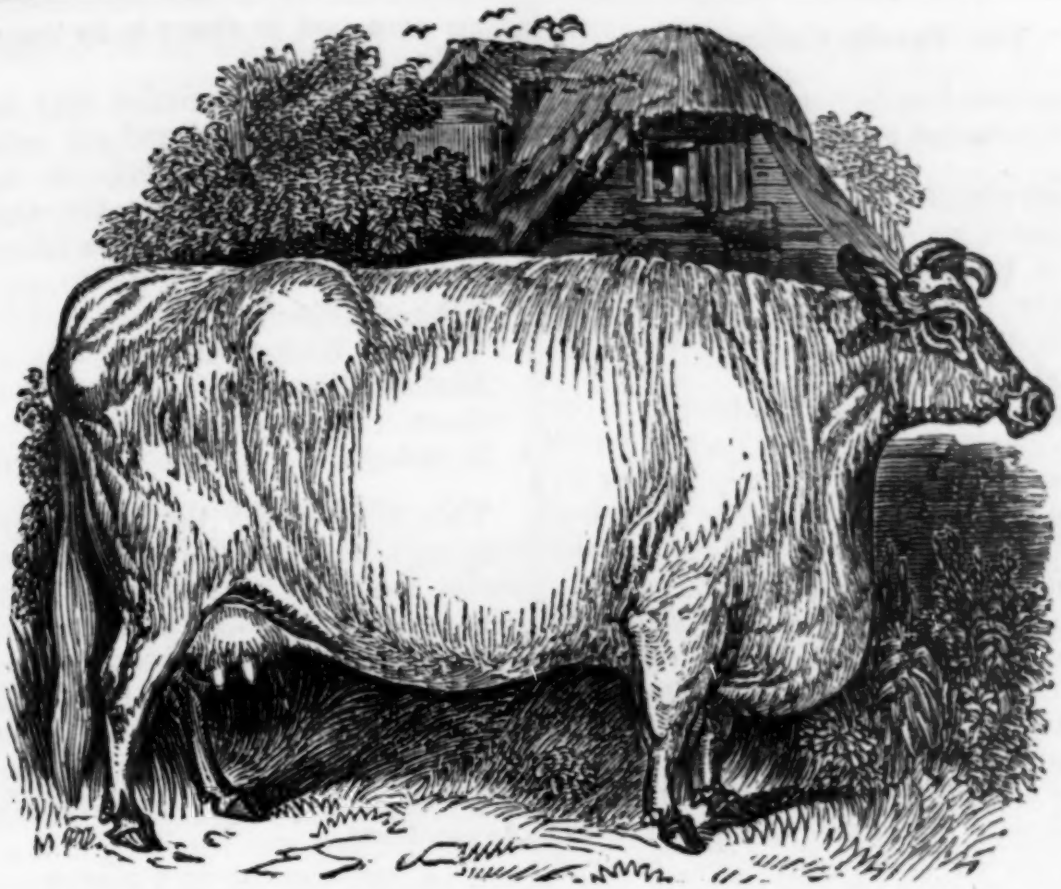
In marriage, prefer virtue before beauty, and the mind before wealth.

Birds on Farms and Orchards.

An extensive experiment has been made on the Continent, the result of which has been, the opinion that farmers do wrong in destroying crows, jays, &c., and the small birds on their farms, especially where there are orchards. That birds occasionally do mischief amongst ripe grain, there can be no doubt; but the harm they do in autumn, is amply compensated by the good they do in spring, by the havoc they make amongst the insect tribes. The quantity of grubs and bugs destroyed by crows, and of caterpillars and their grubs by the various small birds, must be annually immense. Other tribes of birds which feed on the wing, destroy millions of winged insects, which would otherwise infest the air and become insupportably troublesome; even those usually supposed to be mischievous in gardens, have actually been proved to be innocent, for on examination they have been found to destroy those buds only, which contained some destructive insect. On some very large farms, the proprietors determined a few years ago, to offer a reward for the heads of crows, but the issue proved destructive to their farms, for nearly the whole of their crops failed for three succeeding years, and they have since found it necessary to import birds to re-stock their farms! And of late years, the extensive destruction of the foliage and young fruit-trees in orchards, by a species of caterpillar, has excited the attention of the naturalist; and it has been found to have arisen from the habit of destroying those small birds about orchards, which, if they had been left unmolested, would have destroyed or kept down these destructive insects.

Every crow requires at least one pound of food a week, and nine-tenths of their food consist of worms, grubs and insects; one hundred crows then, in one season, destroy 4,780 pounds of worms, grubs, insects and larvæ; from this one fact, some slight idea may be formed of the usefulness of this much persecuted bird, the farmer's best friend: but a thousand more well-attested facts might be stated to show the value of birds to the farmer, if more were needed. Let then, every farmer, and every one who is interested in the labour of the farmer—and who is not? do what he can to protect them, and the face of the country will no longer present the appearance of a scorched and blasted wilderness, but will preserve its beauty to the eye, and the trees will produce their fruit in season.—*N. England Farmer.*

Let no man anticipate uncertain profits.



THE REV. N. BERRY'S COW, OF THE "ALLOY" BREED.

Mr. Colling, during his career as a breeder, tried several experiments in crossing, considering it desirable to reduce the size of the Short-horns of that day, a portrait of one of which appears in the Cabinet, vol. 5, page 345, as Patriot: and the cross with the polled Galloway, produced the most successful results; being calculated by their deep, massive frames and short legs, to bring the Short-horns nearer the ground, and to dipose their weight in a more compact manner; their hardy habits being essentially useful, and the quality of flesh and hair was such as to render the experiment safe. And although at the time, the event was regarded with ridicule by the pure-blood advocates, Mr. Colling persisted, determined to take one cross only, and then breed back to the Short-horn; the only way in which crossing can be successfully adopted: to breed from the produce of a cross directly among themselves, leading to results which have induced many persons to determine conclusively against all crossing: but to take one cross, and then return and adhere to one breed, will be found to *stamp* a variety with sufficient certainty. Mr. Colling's pure Short-horn bull, Bolingbroke, was therefore put to a beautiful red polled Galloway cow, and the produce, a bull-calf, was in due time put to Johanna, a pure Short-horn—she also produced a bull-calf; and this grandson of Bolingbroke, was the sire of the cow "Lady," by another pure Short-horn dam; and from "Lady" has sprung the highly valuable family of improved Short-horns, which has been termed in reproach, the *Alloy*. The dam of "Lady," was also the dam of the bull Favourite; and as the grandson of Bolingbroke is not known as having been the sire of any other remarkably good animal, it is probable that the unquestionable merit of "Lady" and her descendants, is to be attributed more to her dam than to her sire—a volume in proof of the true axiom in breeding—*Dam the best.* The prejudice against this cross was at its highest at the time of Mr. C. Colling's sale of stock, and yet, under these circumstances what said public opinion, unequivocally certified by the stroke of the auctioneer's hammer? "Lady," at 14 years old, sold for 206 guineas; "Countess," her daughter, nine years old, for 400 guineas; "Laura," another daughter, four years old, for 210 guineas; "Major" and "George," two of her sons, the former three years old, the latter a calf, for 200 guineas the former, and 130 guineas the latter; besides a number of others more remotely descended; all at high prices—a sale of 48 lots, realizing the sum of £7115 17s. sterling: "Lady" and her descendants, bringing larger sums than any other family; this sale settling the public judgment and taste.

As a specimen of the Alloy, the above portrait of Mr. Berry's cow was taken three days before she calved, and exhibits her usual condition. She gave a moderate quantity of particularly rich milk, which was all that could be expected.

The Turnip Culture.

"No person ever deserved better of his country, than he who first cultivated the turnip."—Lord Kames.

The introduction of the turnip amongst the cultivated crops, constitutes an era in the art of husbandry. Of the several varieties, three may be selected as most worthy of attention; they are the yellow, the white, and the ruta-baga.

1st. Ruta-baga or Swedish turnip, is the most important of these varieties, and yields the largest quantity of vegetable matter for the use of farm-stock; it should be remarked also, that there are varieties of this root, the best having a yellow colour, globular form, and no neck or stem. The seed should be black and full; one pound being sufficient for an acre, half that quantity producing plants enough, but as the seed is liable to fail, a pound is not too much to insure a crop; the time for sowing being from the 20th of June to the middle of July; the soil best adapted for their cultivation, being a light, dry and friable loam, or almost any dry soil, with the exception of strong and heavy clays. The land is best prepared by throwing it into drills with the plough, in which compost or short manure may be placed and covered with a bout of the plough, forming a ridge, upon the top of which the seed might be drilled. The ruta-baga flourishes well on a clover lay, which may be broken up after the first crop of hay is carried; the plants making their appearance in a few days, if the season be favourable; the cleaning being performed by means of a cultivator; the thinning of the plants being done by hand, to the distance of eight or ten inches in the rows. The quality of this crop depends upon the size, and what is remarkable, the largest roots possess the most nutriment. The value of the crop is very variously estimated, the product being on an average, on good land, 600 bushels per acre, the profits being sometimes estimated as high as 80 dollars per acre, their value varying in different seasons and places. It is one of the most valuable crops raised by the farmer, although they are less esteemed than formerly; still they are excellent food for all kinds of cattle, sheep and horses, and produce large quantities of the best manure.

2. The white turnip requires the same soil and treatment, and the sowing may be delayed for a longer time. It is not so nutritious as the preceding, but is still excellent as a second crop, and for cattle feed in the fall of the year, by which course light soils may be improved. The Tankard variety of white turnips, often yields an enormous crop, and is closer in its texture than the Norfolk white.

3. The yellow varieties may be sown about the 15th of July, and are richer than the whites, although inferior to the ruta-baga. Sinclair estimates the amount of nourishment in 64 drachms, as follows:

	grains.
White Tankard,	76
Common White loaf,	80
Norfolk White,	73
Store or Garden turnip,	85
Ruta-baga,	110

This table shows the superiority of the ruta-baga over all the other varieties; it yields about six or seven per cent. of its whole weight of nutritive matter, while the white varieties afford but four per cent., and in the largest roots, only three and a half per cent. of their whole weight; hence one acre of ruta-bagas, is equal to one and a half acre of the whites.—*Gray's Practical Agriculture.*

If every one would content himself with cultivating no more land with an exhausting crop than he could well manage; if he would never plant with the view of taking more of the original stamina from the land in the present crop, than he communicates to it, we should see less of what is called *poor land;* for we are inclined to believe that there is much less difference in the quality of land, than in the management of it. Strong land with a hard pan, yields more when it is first cleaned, and will last longer than light land; but when both are reduced by exhausting crops, it is generally conceded that the lighter land for many purposes, is more valuable than the heavier: by pursuing a regular rotation of crops with effectual manuring, it is thought the lighter land will give most profit, and that the crops, through the extremes of drought and wet, will be most sure.—*Farmer's Visitor.*

"I HAVE NO INFLUENCE."

What if the little rain should say,
So small a drop as I
Can ne'er refresh those thirsty fields—
I'll tarry in the sky!

What if a shining beam of noon
Should in it's fountain stay,
Because its feeble light alone
Cannot create a day?

Doth not each rain drop help to form
The soul-refreshing shower,
And every ray of light to warm
And beautify the flower?

Beautiful Eulogium on a Wife.

The celebrated Sir James Mackintosh, the well-known English historian, who proves himself in this instance, to have been no less a chronicler of the heart's best affections than a writer of political facts, in a letter to one of his learned friends, presents the following beautiful delineation of the character of his deceased wife—a woman, who, from her husband's representation, must have been such a one as the poet Wordsworth described, when he wrote of

"A perfect woman, nobly planned,
To warn, to comfort and command;
And yet a spirit, still and bright,
With something of an angel light."

"Allow me, in justice to her memory," writes Sir James, "to tell you what she was, and what I owed her. I was guided in my choice only by the blind affection of my youth, and might have formed a connection in which a short-lived passion would have been followed by repentance and disgust; but I found an intelligent companion, a tender friend, a prudent monitress, the most faithful wife, and as dear a mother as ever children had the misfortune to lose. Had I married a woman who was easy or giddy enough to be infected by my imprudence, or who had rudely attempted to correct it, I should in either case, have been irretrievably ruined; a fortune in either case, would, with my habits, have been only a shorter cut to destruction. But I met a woman who, by the tender management of my weaknesses, gradually corrected the most pernicious of them, and rescued me from the dominion of a degrading and ruinous vice.

"She became prudent from affection; and though of the most generous nature, she was taught economy and frugality by her love for me.

"During the most critical period of my life, she preserved order in my affairs, from the cares of which she relieved me; she gently reclaimed me from dissipation; she propped my irresolute nature; she urged my indolence to all the exertions which have been useful and creditable to me, and she was perpetually at hand to admonish my heedlessness and improvidence. To her I owe that I am not a ruined outcast; to her whatever I shall be. In her solicitude for my interests, she never for a moment forgot my feelings and my character. Even in her occasional resentment—for which, I but too often gave just cause (would to Heaven that I could recall those moments!) she had no sullenness or acrimony. Her feelings were warm and impetuous; but she was placable, tender and constant. She united the most tender prudence with the most generous and guileless nature, with a spirit that disdained the shadow of meanness, and with the kindest and most honest heart.

"Such was she whom I have lost; and I have lost her when her excellent natural sense was rapidly improving, after eight years of struggle and distress had bound us fast together, and moulded our tempers to each other; when a knowledge of her worth had refined my youthful love into friendship, before age had deprived it of much of its original ardor. I lost her, alas! (the choice of my youth, and the partner of my misfortunes) at a moment when I had the prospect of her sharing my better days. To expect that any thing on this side of the grave can make it up, would be a vain and delusive expectation. If I had lost the giddy and thoughtless companion of prosperity, the world could easily repair the loss; but I have lost the faithful and tender partner of my misfortunes; and my only consolation is in that Being under whose severe and paternal chastisement I am cut down to the ground."—*Evening Transcript.*

Crows.

Wilson, in his American Ornithology, says that crows have been employed to catch crows, by the following stratagem:—A live crow is pinned by the wings down to the ground, on his back, by means of two sharp forked sticks. Thus situated, his cries are loud and incessant, particularly if any other crows are in view. These sweeping down about him, are instantly grappled, and held fast by the prostrate prisoner, with the same instinctive impulse that urges a drowning person to grasp at every thing within his reach. The game being disengaged from his clutches, the trap is again ready for another experiment; and by pinning down each captive successively, as soon as taken, in a short time you will probably have a large flock screaming above you, in concert with the outrageous prisoners below.*

The same author mentions an agreeable instance of attachment in a crow. "A gentleman who resided on the Delaware a few miles below Easton, had reared a crow, with whose tricks and society he used frequently to amuse himself. This crow lived long in

* This method of catching crows is, I believe, practised in some parts of England to catch jays, who make a most violent outcry when pinned to the ground.

the family, but at length disappeared, having, as was then supposed, been shot by some vagrant gunner, or destroyed by accident. About eleven months after this, as the gentleman one morning, in company with several others, was standing on the river shore, a number of crows happening to pass by, one of them left the flock, and flying directly towards the company, alighted on the gentleman's shoulder, and began to gabble away with great volubility, as one long absent friend naturally enough does, on meeting another. On recovering from his surprise, the gentleman instantly recognised his old acquaintance, and endeavoured, by several civil, but sly manœuvres, to lay hold of him: but the crow, not altogether relishing quite so much familiarity, having now had a taste of the sweets of liberty, cautiously eluded all his attempts; and suddenly glancing his eye on his distant companions, mounted in the air after them, soon overtook and mingled with them, and was never afterwards seen to return."—*Jesse's Gleanings.*

The above anecdote reminds us of a little incident recently mentioned by a friend, who in his travels in the summer of 1832, stopped for the night at a public house in Bucks county, and was much amused by the motions of an active, voluble and intelligent crow, who vigilantly superintended the business of the hostler. He first leaped into the carriage, apparently to give directions about the baggage. The hostler, either intentionally, or accidentally, left a part of it behind, but the crow, on discovering it, was excessively restive and vociferous until it was all removed. He then followed the horses to the shed where they were hitched, in order to be properly groomed. He walked round and round them, examining their heels while the hostler was cleaning them, and wherever a speck of mud was observed that should be removed, his boisterous gabbling gave the servant no rest, till it was attended to. When every thing was done to please him, he strutted off with all the consequence of a gentleman who felt that his orders were law. Mine host himself, could hardly have shown more interest in the baggage and the horses, than did his jet-black crow-ship.—Ed.

For the Farmers' Cabinet.

Cut-worm,--Clover,--Lime.

I have been making some observations respecting the cut-worm since my last communication, and I think the whole round of its existence may be traced in the following manner: First; a minute insect emerging from an egg. This small creature continues to grow several weeks, consuming green food indiscriminately, until full size and mature age are attained. It then crawls into the ground, to the depth of three or four inches, and prepares to undergo a change—begins to draw up, shorten, and gradually receive a hard shell. This apparently torpid state continues about one month; the shell then opens and lets out a fly, much resembling a common candle fly; and judging from every thing else of a similar nature, this fly lays the foundation for a new crop of little worms.

So much to prove that cattle have no agency in the production of cut-worms; they being in every stage, totally unfit to encounter the difficulties belonging to the trade of a *tumble bug*. As still further proof—I once mowed a part of a field and left the other part without mowing or pasturing. Next spring, the corn growing on the part on which the grass was left, was nearly all cut off by the worms. The corn on the mowed part was not injured at all; both ploughed in the spring, and at about the same time.

A correspondent, X., through the Cabinet, sixth vol., page 208, inquired how to preserve clover best through the winter. From my own experience I am confirmed in the belief, that clover should not be pastured;—the surface of the earth should be kept as light and dry as possible, and if the subsoil is a stiff clay, so much the better. If the surface is rendered compact by treading, it unites firmly to the top of the clover roots, at the commencement of frost; and as freezing advances, the surface of the earth rises, taking the clover with it, even defying the strength of the tap-root, fastened in the clay beneath. The earth settles every thaw, and takes lower hold on the root every freeze. I have seen, in wet places, young apple trees with tap-roots two feet long, pulled entirely out of the ground by a winter's frost. Should the surface be light and dry, it will not adhere so firmly to the root by freezing; the earth may rise around, and leave the plant undisturbed.

I was much pleased with an article in a late number of the Cabinet, on the use of lime, from the pen of I. W. Vanleer; and so far as my farm is concerned, I cordially endorse his doctrine; however, this is a limestone country, and every farmer may make his own lime if he will. I have used lime in various ways, and I think the trowel applies it better than anything else. If it is applied to land, the further it is hauled, in a general way, the more good it does.

Micajah T. Johnson.

Short-creek, Harrison co., Ohio, 1843.

For the Farmers' Cabinet.

Lime as a Manure.

I was a few days ago engaged in reading an agricultural periodical of some celebrity, and was rather surprised at the great variety of opinions made public through its pages, on the subject of lime as a manure. I have for some years believed that its action is as I shall hereafter describe it; and whilst I offer no objection to the views of others, and do not propose to enter into any controversy in favour of my own, I indulge a hope that when I add another to the numerous opinions on the subject, it will not be found to be the least worthy of belief, or most at variance with practical results.

It is understood to be one of the laws of nature, that when the principle of life has ceased to exist in organized matter, animal or vegetable, chemical action, till then suspended by the power of life, resumes its sway, the various parts of the organized lifeless body, are acted upon by light, heat, air and moisture; decomposition takes place, and a large part of the substance in various combinations, passes into the air in the gaseous form—of the carbon so passing off, either as carbonic acid gas, or carburetted hydrogen, the atmosphere becomes the receptacle where it remains in a state of mixture, the carbon in the state of carbonic acid gas, which, although specifically heavier than atmospheric air, and in a state of mixture only, and not of chemical combination, is found generally diffused in all situations, and varying less from a constant quantity than might be expected.

When we remember that of animal and vegetable bodies, the largest constituent part is carbon, and that therefore new bodies depend upon carbonaceous matter for their growth and composition, it will be obvious that if the carbon in the atmosphere can be rendered available for the sustenance of living vegetables, by any process that we can make use of for that purpose, that then, the most important operation in farming will have been performed.

I here premise, that the farmer does not make the crop to grow: he destroys the weeds, opens the ground to the proper depth, sows good seed in proper quantity and at the right season, covers it sufficiently—mixes with the soil such substances as are necessary for the growth of the plant, and in such place that the living plant can render them available to its growth; the laws originally impressed upon matter, and the blessing of Heaven produce the result.

Lime and magnesia were formerly considered as alkaline earths, and as such I shall here treat them; both of them have so much affinity for acids, that in nature I believe they are always found combined with them; my recollection is, that of the principal acids, both lime and magnesia have the least affinity for carbonic, and the greatest for sulphuric acid; yet as the stronger acids are not found in the atmosphere, whilst the carbonic acid is always there present—both lime and magnesia, when freshly calcined and in the states known as quick lime and pure magnesia, and exposed to the air, absorb carbonic acid gas from the atmosphere and become carbonates.

Thus far there appears to be an approach to general agreement, viz.: 1. That vegetable and animal matter are formed in part of carbon: 2. That in the decomposition of vegetable matters, the carbon in part escapes into the atmosphere, combined with oxygen, forming carbonic acid gas: 3. That lime and magnesia, when in a caustic state, as produced by calcination, and exposed to the air, absorb the carbonic acid gas. Therefore, when lime or magnesia in the caustic state is reduced to an impalpable powder, and thinly spread upon the surface of the earth, it will rapidly become a carbonate; and thus we shall have a carbonaceous compound upon the surface of the earth, in such a situation as to be accessible to the roots of plants. I believe that many plants have the power of separating the carbon of the carbonates of lime and magnesia, thus placed within their reach, and appropriating it to their own growth and increase; but the progress of the growth and development of plants, being under the government of the occult principle of life, our evidences can consist only of analogies—of probabilities drawn from the known properties of chemical substances.

Can the roots of plants absorb carbon from the carbonate of lime in the earth?

Certain plants do take up substances more difficult of solution, and for which, I know not that any plausible theory has been offered: thus, pure flint is found in the cuticle of some plants: in the scouring rush, *equisetum hyemale* and pigeon weed, *lithospermum arvense*, plants of our district, it is abundantly perceptible.

The following paragraph is extracted from the North American Review, for October 1842, stating a case wherein the roots of living plants overcame an existing combination much greater than the case in question.

"It must have been in the observation of many persons who cultivate ornamental bulbous roots in glasses, that the inner surface of the glass loses its polish and becomes

rough; this is merely from the decomposition of the glass—now water alone will produce no such effect upon glass; the living plant communicates by its roots through the water, (for the roots are generally not in contact with the glass) an influence powerful enough to separate the potash of the glass from its strong combination, and transfer it to itself:—with the knowledge of such facts in our view, we are not left to the necessity of rejecting a belief in the existence of any process in vegetable life, merely because it cannot be explained by the laws of inorganic chemistry."

I make the following extracts from Liebig's Agricultural Chemistry, New World edition, 1842, page 9, on the article Humus:

"Woody fibre in a state of decay, is the substance called *humus.*" "The carbonic acid which protects the undecayed humus from further change, is absorbed and taken away *by the fine fibres of the roots and by the roots themselves;* this is replaced by atmospheric air, by which process decay is renewed and a fresh portion of carbonic acid formed." "The roots perform the functions of the leaves from the first moment of their formation; they extract from the soil their proper nutriment, namely, the carbonic acid generated by the humus."

How will this theory be sustained by the results, so far as we have had experience?

If this be the true theory, lime should be spread upon the surface in the state of a fine powder, and suffered to lay upon the surface until it became mild by the absorption of carbonic acid gas—for the object is to obtain the carbonic acid to unite with the lime, *from the air, and not from the earth;* for if the lime is placed in a situation to obtain carbonic acid from the earth or the decaying humus of the soil, no advantage would be gained; it being very probable that living plants can assimilate the carbonic acid more easily from decaying humus, than from carbonate of lime—but if the lime absorbs the carbonic acid from the air, it is a quantity fixed in the soil in addition to what before existed there, as manure, decaying humus, &c.—So far as we have experience, it is, I believe, decidedly in confirmation of the theory. I applied lime to my grounds many years ago, putting it on at the same time with the stable manure to the wheat crop, and with some care to have them ploughed in together, without exposure to rain or dew; the results were so discouraging, that I discontinued the use of lime for some years—the wheat crop was generally injured, although good crops of grass succeeded, which should have been the result according to the theory—the carbonic acid gas, given out by the decomposing manure, instead of being made available to the growth of the wheat, became absorbed by the lime, thus diminishing the proper support of the wheat, but which was afterward furnished to the grass. Thirty or forty years ago, when little lime was used as a manure, it was occasionally mixed in the dung-hill; but more frequently mixed with corn-stalks and decaying vegetable matter, as a kind of compost; these methods of using it have been abandoned, as improper; which should be the result according to the theory.

According to this theory, there should be no disadvantage from using lime, (so called) much mixed with magnesia, as the latter requires about as much carbonic acid for its saturation as the former; it is more soluble, and in particular, is more acted upon by ammonia, but requires more time for its saturation with carbonic acid gas; it would therefore, require some longer time than pure lime, before being ploughed down.

From recently published analyses, it appears that the lime of the great valley, or range, passing through Montgomery, Chester, Lancaster and York, is nearly one half magnesia. Of this lime, millions of bushels are annually sold as a manure, and used in Jersey, Pennsylvania, Delaware and Maryland, with results so encouraging, that the demand has increased more than ten-fold, within ten years.

From the circumstance that lime is found in small quantities in some vegetables, it has been supposed that it is useful only for the purpose of furnishing the requisite quantity of lime thus found in their substance;—late experiments made by incinerating vegetable matters, go to show that 50 bushels of lime per acre, would not be taken up in an hundred years, by those plants in which it is found to exist in the largest proportion.

It may properly be objected, that if the roots of plants can and do decompose the carbonate of lime in the soil, and use the carbon or carbonic acid gas, for their own growth and nourishment, that the lime would again be caustic and uncombined. It is, however, a possible case, that plants may possess that power, and that they may not always be obliged to use it: it is known that in dark cellars and covered places open to air, but not to light, that nitrates are formed; and in whatever way any acids may be formed in the earth, having more affinity for lime than the carbonic, the latter would be ejected from its combination with the lime, which would unite with the stronger acid, (if the nitric, forming a soluble compound and sinking away in the earth,) in which case the carbonic acid gas would be uncombined, and

as available for the growth of plants, as if arising from the decomposition of stable manure.

To conclude, my view is, that the air as well as the soil contains the elements of which vegetable matters are in part formed; that the living plant appropriates those elements to the purposes of its own growth and nourishment, by its roots from the soil, and by its leaves from the air—that the *air* always contains a sufficiency of carbonic acid gas; but that the *soil* does not, and that we spread lime upon the soil to absorb the carbonic acid gas from the air, to add it to the soil.

A. W. Corson.

Whitemarsh, Pa.

For the Farmers' Cabinet.

Colman's European Agricultural Reports.

Messrs. Editors,—Mr. Colman's tour to Europe, will prove of vast importance to the Agricultural community of both countries; while for himself, there is no profession or occupation so well calculated to draw forth those energies, which all who know him, admit that he is possessed of in an eminent degree. With a head to discriminate, a hand to execute, and a tongue to express the feelings of a heart devotedly attached to the noble profession of agriculture, it is certain that his periodical reports will be replete with the most interesting matter that can occupy the attention of practical men in both countries—the wish of English farmers to know what an enlightened American agriculturist will think and say of them, being quite as natural as for the American farmer to be desirous of knowing how the English agriculturists can progress at all, under a load of taxation that would grind any other class of men to powder.

On Mr. Colman's arrival in England, he will be struck with surprise at the great superiority of the agricultural implements and tools of this country, in variety, diversity of shape and quality, in general—the plough, in all its different forms and elegance of finish, in particular; indeed an Englishman scarcely knows how to express the difference which he observes in their favour in this country; and it is cause of gratulation, to find it is Mr. Colman's intention to take with him some of our ploughs for presentation to the Royal Agricultural Society of England, and others of note in that country and France. This will, indeed, be to open a door of communication, the good results arising from which are scarcely to be appreciated, especially as it is known that he is as competent to guide a plough as to lecture upon it, or to describe its parts and qualities. At the same time, he will be as much struck with the superiority of the *husbandry** of England over that of this country, and which he will no doubt be candid enough to acknowledge, particularly as it is his intention to visit that remarkable spot, the island of Jersey, where he will witness that *virtue* portrayed in living characters; for assuredly, there is no part of the world where, in the circumference of 40 miles only, with a population of great density, will he find more good management, careful prudence, or rigid economy—*good husbandry;* indeed, there is no part of the globe that offers to the agriculturist so fair a field for contemplation, as the island of Jersey. In the first place, its beautiful location, soil and climate; its almost republican form of government, which to an American, must have charms indeed; its peculiar code of laws, dating as far back as the time of Rollo, so lenient in criminal cases, as to have given rise to the observation, "a man must have strong friends to get hanged in Jersey," &c. And then, its elegant and diminutive breed of Dairy cattle of the purest blood; the peculiar mode of management, by which their owners believe they can secure to themselves a very large proportion of heifer calves; their method of feeding stock by *tethering*, by which more than double the number can be maintained on the same land; their excellent quality of butter, although there is not a spring-house on the island: their practice of trench-ploughing and spade-labour in the fields, by which they raise such enormous crops of lucerne, parsnips, potatoes and grain, as far surpass the average yield of any of the counties of England; it being 37 bushels of wheat, and 29,077 lbs. of potatoes per acre. Devonshire, 16 bushels only, of wheat per acre. The opportunity of ascertaining whether the Mediterranean wheat of this country is not identical with that, known there as the *Tres mois*, or three months, which is a spring wheat: the method of manuring with the sea-weed and its ashes, and the cause of freedom from rust of the wheat crop; the advantage of visiting Colonel Le Couteur, and examining his interesting collection of wheats, of almost every variety; and the chance afforded, of setting to rest the question of the virtues of the *Divining rod*, for the discovery of springs of water in the earth, by investigating the subject on the spot, and witnessing the operation performed by the hands of a person who has pointed out by these means, hundreds of springs of

---

* "Agriculture, the art of raising crops. Husbandry, the art of preserving and expending them."

water in a rock of primitive or granite formation, of which the island is composed, and which are not to be met with except in its fissures; thus increasing the difficulty of ascertaining where they lie. And lastly, to discover the secret, by which these islanders contrive, on a farm of four acres of land, "to live and get gain."*

But the glory of English agriculture is its sheep husbandry; and here will be an ample field for the tourist's labours—all new ground too, and requiring his peculiar tact of character in the cultivation of it. And although it may be true, that much relating to the subject might be foreign to this country in its present circumstances, yet if a Colman cannot perceive that *much* also may be made subservient to our present state of agricultural attainment, it will be strange indeed. The introduction of a regular rotation of green crops, the turnip especially, has made England what she is; and the system will be as applicable here as elsewhere, when taken up and prosecuted on a regular and sufficiently extended scale: the theory is correct, and therefore the practice must correspond. P.

Philadelphia, April 16th, 1843.

A MODERN writer of a series of articles upon electricity, published in the Magazine of Domestic Economy, of 1841, has adduced evidences in proof of the universal agency of that ethereal agent, which are equally bold and striking. He says:

"There is life in the seed and in the embryo plant, which makes the first to germinate, the latter to grow, become developed, and acquire an organization it did not at first possess. We know not what this living principle is in plants, which possess neither sensibility nor locomotion, nor volition; but we may readily hazard the supposition, that it is closely connected with electrical action, which excites the efforts of vegetation, and governs all the changes and functions of its organs. The absorption by plants of carbonic acid, and the assimilation of its carbon as nourishment, and the emission into the atmosphere of its oxygen, under the influence of light, the decomposition of water by the leaves of plants, the absorption of its hydrogen, the rejection of its oxygen, which is diffused through the ambient air, the giving out by plants of carbonic acid in the dark; these, and the various other functions of vegetation, are governed by electrical agency."—*The British Farmer's Magazine.*

* See "Dialogues," page 182, vol. 3, and 208, vol. 4, of Cabinet.

For the Farmers' Cabinet.

The Milch Cow.

I KNOW not that I can better notice the Montgomery Farmer's communication in your last, than by referring him to P. M.'s article in the same number, giving an account of the life and death of the M'Elroy Cow. Here is one of our very best breeders of pure Short-horns, and most intelligent correspondents of the Cabinet, *telling tales out of school*, or I am much mistaken. The fact is, when a cow makes 16 pounds of butter a week, I believe we would all be apt to call her "my beauty," even if she were "hollow backed, and consequently large bellied, with a light thigh;" all indications of deep milking; P. M.'s "Bessy" exhibiting the latter of these defects, in a way so as to add at least 50 per cent. to her value in my eye, and that of every one who understands the matter—her owner's, especially.

P. M.'s recommendation to agricultural societies to pay more attention to milking stock than they have hitherto done, giving premiums to the best milkers, without regard to shape or breed, is refreshing; the more so, coming from a Short-horn breeder, it shows an independence of mind not always found even among breeders.

In a recent publication on the management of the Mid-Lothian Dairies, the author observes: "The farmers now do not even rear their own milch cows, but purchase them from time to time, as required, in some cases every season; so that their dairy *is always in full milk*, the new cows being purchased newly calved; and those of the former year are then fattened and put off to the butcher." And with this I take leave of "A Montgomery County Farmer," admitting that every one has a right to his own opinion, and is at liberty to convert others who differ from him *if he can.*

ZEBU.

A LATE traveller in Norway, asserts that the Norwegians, in their journies over the half frozen rivers, use the following contrivance to release their horses when they fall through holes in the ice, viz: they throw a noose over their necks, which they pull tight, till the horse, beginning to be strangled, has its abdomen so much swelled with gas as to float on its back, and is thus easily drawn out of the water over the edge of the ice.—*London Medical Gazette.*

"What's beauty? Call ye that your own?—
A flower that fades as soon as blown."

Hints on Manuring.

The usual mode of application of farm-yard manure is, by carting and spreading the materials on the surface of a field when in an incipient state, and then burying them with the plough; experience proving that the decomposition of vegetable and animal manure is in proportion to the state of the land to which it is given; so that, if the field be in an exhausted state, and only one ploughing follows, just to bury the manure, its decomposition and chemical and mechanical union with the soil will be very slow. Manure so employed, is in fact wasted, instead of being made the most of, as when put early on a fallow and worked with it, because the manure, when buried at one ploughing, lies in contact for a whole year, with the same surfaces of the soil, and being in lumps, its sphere of contact and of action must be proportionately small: and the consequence is, that less fermentation takes place than really ought, and a portion of the manure will escape in gas from its own fermentation, after the saturation of the contiguous particles of the soil has been completed, and the absence of more fresh particles to arrest it; while, if plants are growing immediately above those lumps, they are injured from apoplexy, and lodging and rust of the grain that follows, by receiving this food too readily and not sufficiently diluted; and this is the reason why fish manure or yard manure is so soon exhausted, when put on a field to be immediately cropped, and is not cultivated previously: stubbles, when ploughed in, on poor and half-cultivated lands, will remain with very little decay for a whole year, from the existence of the strong balance of affinities resulting from the exposed particles being already saturated, and no new ones brought up to the sun and air, when no fresh combinations or fermentation can take place: whereas, if stubbles are ploughed in, preparatory to a fallow, so as to have the benefit of several successive ploughings and harrowings, nearly or quite the whole of the stubble will be decomposed and blended with the soil, and be rendered a valuable manure, by the reciprocal fermentation of the land and the stubble—the former set into activity by the cultivation, and the latter, from its easy decomposition, soon feeling the effect of the former; when they act conjointly in their general fermentative and fertilizing process.

When a crop is to be principally benefited by the manure laid on a field, with one ploughing only, the manure should be rich, and in a forward state of decay; because its decay, when in a long or green state, will be unassisted by cultivation, and the affinities of the particles of the soil will be too strong in their balance to expedite the process. The manure in this case, will require to be brought into that state of decay, before it is applied, which will insure its own fermentation afterwards, without so much of the aid from cultivation; and then, like shavings to a nearly extinguished fire, a partial overthrow of the strong balance of affinities of the soil will be produced, and thus far restore its fertility: but manuring in this way, is at the expense of the manure itself, by the loss that necessarily ensues, whilst the heap lies fermenting in the mixen, in order to its being reduced to the requisite state of decay; which decay, or rather calcination, causes a portion of its best elements, as well as quantity, to be evolved to the winds. Again, when the manure is laid on only before the last ploughing, even if it be a fallow, and a crop be then sown, the manure is found only partially distributed in the soil, and more or less in lumps; and before the young and tender plants can reach these with their delicate fibres, many perish. The above circumstances lead to the conclusion, that both in the garden and in the field, the best time and manner of applying vegetable and animal manures—indeed, manures of every description, is on a fallow; and to cart and spread them on the land, either in the autumn, winter or spring, according to their nature and circumstances; when there will be sufficient time to mechanically mix them well with the soil, by successive ploughings and harrowings. By the experience of the best gardeners, raw or fresh manure is never found so healthy for plants, as when it has been digested and blended with the soil by previous fermentation and cultivation, because the materials of the raw manure are forced, as it were, upon the plants in an unselected, undiluted, crude state; thus favouring, if not causing disease, apoplexy, or extravagant and injurious fertility: the only exception to be adduced, is on stiff clay lands, when it might operate also mechanically in keeping the soil more open.

By the manure being so early applied, the particles of earth are more quickly and generally divided; therefore, the sooner and better are they able to admit the fresh air, rain and dews; thus favouring their decomposition and union with the soil; and likewise the same of the manures, which, uniting in their effects, co-operate with the plough most powerfully in the general increase of fermentation and pulverization; the thermometer always denoting an increase of

temperature when inserted about three inches into the soil after recent cultivation, and also after manuring; but when these are both combined, the rise in the instrument will be found proportionally higher. Under these favourable facts, it is not to be wondered at, that the long, strawey manure becomes soon reduced to a short, fine state, and distributed regularly by after cultivation; and that when any delicate seeds are sown on a field thus treated, they are assisted in their infant vegetation by the increased native powers of fermentation, in the early manured and well pulverized soil: their first roots having the great advantage of the necessary food being immediately contiguous to them, and in that state of delicate suspension, or balance of their affinities, that the least vegetable effort of the plants is sufficient to overthrow; and, in consequence, such a tilth is more favourable to their unfolding their future vigor, and their arriving perfect at maturity. If the reasoning here employed be correct, this favourable conclusion may be drawn—that the early application of vegetable, animal and other manures to the fallow, contributes in a multiplied degree, to the fertilizing the same, by the *mechanical* as well as *chemical* assistance which they impart to the power which the soil has, of combining with, and decomposing air and water, with, at the same time, their pulverizing effects; which objects could not be gained, if the manures were applied only before the last ploughing; and by this practice also, the four following points are gained, viz.:

1st. Considerable less loss in manure, by its fermenting in the soil, instead of the mix-hill. 2nd. The soil deriving more fertility by the early application of the manure than when put on late, and this at no additional expense. 3rd. The manure when carted on the land early, less loss ensues from evaporation. 4th. If any kneading or treading of the soil should take place during the carting, there is time afterwards to get the better of the evil, with having the manure to assist the husbandman's efforts.

Bland's Agriculture.

From the American Agriculturist.

Cost of a Farm, &c., on the Western Prairies.

No, no, gentlemen, "your old friend" is not "lost in a cane-brake," nor yet in a snow storm; although one of my neighbours has been within a week past, and actually perished, and that too, in November, in latitude 41½°. He was on a "trip to mill," and got lost on a large prairie on the night of the 16th inst., and perished in one of the most severe storms ever known at this season, since the country was settled.

Little do you know in your "thick settlements," what the pioneers of these "new settlements" have to endure. Not that there is much danger of being "taken by a bear," as the only one that ever ventured into "these diggings," fell a victim to my rifle. As to my "taking to politics," I cannot tell what may happen, as I have known many instances of insanity, "about these days." You will have received "late information from the prairies," before this, which will tell you that the fire of improvement is spreading. The staple commodity of the prairies has always been wheat; and the price heretofore has been so high, that the cultivators have entirely overlooked the necessity of providing, while they may, for a different state of things; consequently the great reduction in price has fallen heavily upon this region. It will not now command over 38 cents in the Chicago market, and although under the operation of some of the beautiful theories of our politicians, coarse wool is equally depressed, yet when you take into consideration that a vast amount of wheat has this season been hauled into Chicago, from 100 to 200 miles, the difference in transportation is so great as to appear at the first glance, vastly in favour of wool.

But I would not wish to be understood as advising the prairie farmer to turn his attention to wool alone. The farmers in general turn their attention too much to one object. At one time it is wheat—again pork—and so on. And the grand difficulty is the great want of capital. On this account they are compelled to submit to forced sales. They are unable to hold over a crop. In fact, if able, they have yet to learn how wheat can be kept in stack, as at present they are unable to find storage for the grain after threshing.

You hear complaints of the low price of beef. Do you know how low it can be produced? I believe you are advised that no finer beef was ever eaten than that made upon prairie grass. Let me tell you the actual cost. I can buy calves at one dollar and fifty cents each. I have and can hire them wintered until four years old, for one dollar and fifty cents, each winter. Here, then, I can have the finest fat steers four and a half years old, for seven dollars and fifty cents a head—cows, of course, at the same cost, including a couple of calves. As you are whole hog men, I will give you a few items, and leave it to you to "cypher out" the actual cost of western pork. In the first

place, pigs are a spontaneous production. Corn on the farm, the present year, and perhaps it is about an average, within 50 or 60 miles of Chicago, is not worth over 12½ cents a bushel. Oats eight to ten cents, and potatoes less. And they being so low, I will not pretend to fix a price upon beets, rutabagas, carrots, &c., but they can be raised *cheap*. The summer feed costs little or nothing, and as often as every other year, hogs will get fat upon the mast, which our oak and hickory groves produce abundantly. The next question that I expect your eastern readers to ask, is, Can prairie farmers raise grain at these prices! I will state a few facts, and they shall draw conclusions.

The first cost of land is one dollar and twenty-five cents an acre. The first ploughing we generally count as cost, though erroneously. This is worth one dollar and fifty cents an acre; or to be better understood, I will state differently. Prairie land is abundant at government price; but timber is mostly in second hands, and is held higher.

A quarter section of prairie, that is, 160 acres, at $1 25, is	$200
Timber, say 40 acres, which is more than enough, at $3.	120
Breaking up the prairie, at $1 50.	240
Fencing it into four lots, eight rails high and stakes, 960 rods, or three miles, 15,366 rails, at one ct. 153 66; 3,840 stakes, at ½ ct. 19 20.	173
A good comfortable double log cabin, such as first settlers generally occupy.	50
Other small buildings and temporary sheds,	50
Average cost of a well with pump, $30, with buckets, $15.	15
I will add to cover contingencies, such as half an acre of land well paled in for garden, a cow-yard, hog-pen, and other "fixings."	72
This makes the cost of the farm, independent of the woodland, just $5 an acre—the total,	$920

Here, then, are 160 acres of as rich soil as it is possible to imagine, all ready for the emigrant to take possession of and put in a crop, for the sum of $800. The first crop of corn will average about 15 bushels; in oats, about 20 bushels; in wheat, about 10 bushels; potatoes, about 150; turnips, or rutabagas, 300; buckwheat, 25; beans, peas, millet, pumpkins, melons, &c., &c., "a right smart chance," and some of the latter, as big "as a good sizable boy can tote." The second crop will be some better, though the sods will yet be in the way of cultivation. After this you have a deep, loose, rich black soil, which as you do unto it, so it will do unto you. The practice generally adopted, is to take the skin and starve the body—burning straw and wasting manure—"running over" four times as much land as can be *cultivated*. In my statement of prices, I have taken this county (the Northwestern one in Indiana) for a basis. In others there may be a slight variation. Both in this State and Illinois, Missouri and Iowa territories, there are thousands of locations to be had at about the rates stated.

If such "information from the prairies" is such as you want, you can be furnished from time to time, by "Your old friend,"

SOLON ROBINSON.

Lake C. H., Ia., Nov. 25th, 1842.

For the Farmers' Cabinet.

The Peach on the Plum-stock.

IN one of the former volumes of the Cabinet, a correspondent advises, as a protection against the worm, to bud the peach upon the plum-stock; and asks, if any of your readers can inform whether the plan has ever been carried into execution, and what has been the result?

I beg to state, in the orchard of Mr. Caleb Brinton, at Prospect Hill, in Salisbury, Lancaster county, there is a peach tree many years old, that has been budded on the plum stock, about 18 inches from the ground. At the point of junction, the peach tree is about double the size of the stock, and is completely girdled by the worms, which have also extended their ravages downwards into the plum-stock for about the space of nine inches; and from this part of the tree have been extracted, the present season, perhaps not fewer than 20 worms, which have preyed indiscriminately on both peach and plum, at, and above and below the junction formed by budding; but not a worm has been detected at the *root* of the plum-stock; the tree, however, being as completely destroyed as though the evil had proceeded from thence; and forming a perfectly satisfactory answer to your correspondent's inquiry. It is worthy of remark, that during a late examination of the peach trees in this orchard, one half of which is kept in grass, the other under cultivation, there were about four times as many worms found in those growing in the cultivated portion of the orchard, as in those grown around by grass—an interesting fact for the Delaware peach growers, who, we are told, keep their peach orchards under cultivation, by way of protection.

C. B.

Pequea Valley.

For the Farmers' Cabinet.

Magnesia, a necessary constituent of Soils and Plants.

As the controversy with regard to magnesian lime being superior as a fertilizing agent, to common lime destitute of magnesia, is, we hope, settled, I propose resting the magnesia subject on its true ground, on its intrinsic merit as a specific fertilizer. My own experience in the application of magnesian lime and the corresponding results, so completely harmonize with the theory of the most celebrated chemists, (and practice is the true test of theory) that, according to Crockett's phraseology, "I am sure I am right." With a view to abbreviate this article, I will just observe, that much of my argument has already been anticipated by a Delawarian in your last number, and indeed enough to prove my position. I shall merely add a few more quotations from Liebig and Desaussure, which are to the point; and by way of reply to my friend Vanleer, who has favoured me with another *rather facetious* article, I shall give him a respectful passing notice, in the meantime. By the way, it may be no small panegyric of a Delawarian, to say, his paper is sufficiently strong and irrisistible, of itself, to repulse the whole array of anti-magnesians, whose notions, when operated upon by the panoply of science, vanish like a vision. But to my friend Vanleer, I would say, his peculiar tact and ability, and zeal, in order to lead to distinction or eminence, must be enlisted in a better cause. But as he has made the *amend honourable*, and *yields* his right to the "golden plough," we should be rude indeed, did we not exercise towards a prostrate foe, that genuine magnanimity which is the characteristic of noble victors! He has been attacked by so many correspondents, while none of his anti-magnesian allies have come to his rescue, I would now interfere in his behalf, and say, spare him! but as he has in his last article, filed four exceptions, or counts, against me, I shall now proceed to examine them separately: 1st. For stating that 300 bushels of lime are applied to some of the best land in Great Britain. 2nd. That some soils are unfriendly to mineral agency. 3rd. That barren soils may be renovated by lime, and indirectly by clover. 4th. The conflicting statement, that farms may be enriched by stable manure, *without* lime. Ans. 1st. My farm has received in all, from time to time, 300 bushels of magnesian lime per acre, at the rate of 100 to 120 bushels per acre, at a time; and will bear 200 bushels per acre, judiciously applied, at a time; yet I shall not pretend to say this rate is economical or advisable. A friend near me, has put on clay land, 250 bushels at a time: not at all strange, then, that 100 to 200 bushels of lime are applied in England, on their more highly manured and cultivated acres. The quantity of lime may always be regulated by the quantity of manure or vegetable matter in the soil: not only to furnish carbonic acid, to enable the hot lime to yield its causticity, but also to furnish matter to combine with or act upon; the productive power of the land of course, is correspondingly increased. Ans. 2nd. Cold and wet soils are *unfriendly to mineral agency*, simply, because lime will harden and solidify under water, and because wet lands are not permeable to light and air, and partake of the temperature of the water, with which they are saturated; consequently the process of fermentation or putrefaction is retarded, if not prevented. Again, on the same farm we frequently see the effects of lime on upland, more striking on some fields than on others; generally, perhaps, owing to a lack of vegetable substance, and therefore more unfriendly to the speedy action of *mineral agency*. Ans. 3rd. Barren tracts, cannot be renovated by clover *directly*, because clover will not *grow;* yet by applying lime on a barren surface, for a year or longer, before it is cultivated, there will be a new spontaneous growth of grass; (see article in March number of Cabinet, by a Deer Creek farmer,) and after a course of cultivation, may be additionally improved by clover, which will then flourish. Ans. 4th. Many farms like Townsend's, are kept in a high state of cultivation, by stable or animal manure, without any lime or magnesia being applied, and why? Because animal manures furnish both these alkalies, in addition to what the soil may contain.

According to Liebig, when we manure land with the dung of the cow or sheep, we supply it with silicate of potash (the pabulum of wheat) and some salts of sulphuric acid. In human fæces, applied in different parts of Europe, we give the land phosphate of lime and magnesia. And in the dung of the horse, we give it phosphate of magnesia and silicate of potash.

"Without alkalies and alkaline bases, most plants cannot exist." "Seeds of wheat or corn, could not be formed without phosphate of magnesia." "Soils are rendered unfit for the cultivation of potatoes, even though the tops be returned to the soil after the removal of the crop, unless some means are adopted to replace the phosphate of magnesia, removed by the roots or potatoes."

"We may form an idea of the quantity of phosphate of magnesia in grain and grass,

when we consider that the concretions in the cœcum of horses, consist of phosphate of magnesia and ammonia, which was obtained from hay and grain consumed as food."

"It is now certain, that potash, soda and magnesia, can be extracted from all parts of the structure of plants, in the form of salts of organic acids." "In Flanders, the yearly loss of the necessary matters in the soil is completely restored, by covering the fields with the ashes of wood or bones, which may or may not, have been lixiviated, and of which the greatest part consists of the phosphates of lime and magnesia."

The above quotations are all from Liebig.

According to Desaussure, "plants require unequal quantities of the component parts of soils, in different stages of their development; an observation of much importance, in considering the growth of plants. Thus wheat yielded one-third more ashes, one month before blossoming, than while in blossom, and one-third less after the ripening of the seeds. It is therefore evident, that wheat from the time of its flowering, restores a part of its organic constituents to the soil, leaving the phosphate of magnesia remaining in the grain or seeds."

According to Liebig, his analysis of soil, from the surface of a field distinguished for its fertility in Belgium, gave, in 100 parts:

Silica,	64.517
Alumini,	4.810
Peroxide of iron,	8.316
Do. manganese,	.800
Carbonate of lime,	9.403
Do. *magnesia*,	10.361
Pot-ash,	.100
Soda,	.013
Phosphoric acid,	1.221
Sulphuric acid,	.009
Chlorine,	.003
Humus,	.447
	100.000

The question by Mr. Vanleer was anticipated, in relation to lime being applied in larger quantity than plaster, by "A Delawarian," and fully expounded; but in addition, I would just say, plaster is necessary *below* the surface to fix the ammonia in the soil, as well as *on* the surface, to fix the ammonia of the atmosphere. In the spring of 1832, I sowed a bushel of plaster for experiment, on an acre, in the middle of a wheat field; after harvest, the field was once ploughed deeply and again seeded in wheat, and in the spring of 1833, seeded with clover; the growth on the above acre, where the plaster was ploughed down, was the most surprising effect of plaster I have ever seen, interfering with the cradle at harvest; while the adjacent parts of the field presented a diminutive and sickly contrast. The allusion to an experiment made by Daniel Buckley, Esq., by spreading plaster with a shovel, at the rate of 30 bushels per acre, must have been understood in a *Pickwickian sense certainly.* Mr. Buckley lived and died within a good gun-shot of my residence, where I write, and yet *we* know nothing of any such extravagant experiment having been made by him here.

A Lancaster County Farmer.

Pequea, April 17th, 1843.

P. S. The above remarks having been written immediately after reading Mr. Vanleer's communication, and that too, upon the spur of the moment, I have found by *reviewing* his article, one of his queries remains unanswered. He asks, why the man who kept a small farm in good order with animal manures, without lime, could not, after extending his acres or domains, keep his large farm in the same good condition without lime? I answer, because he did not make animal manure, which as above proven, furnishes both lime and magnesia, in sufficient abundance, or in the same proportion, as on the small farm, and by depletion, his land deteriorated. I repeat emphatically—use lime, plaster and magnesia, liberally and judiciously, in addition to all the ashes and animal manure you can "*rake and scrape;*" on account of our animal manure not keeping pace with our system of cropping, we *must* use mineral manures, as important auxiliaries and additional resources, to improve our farms and enable us to extend and increase our crops. Vegetables or plants, like animals, thrive best upon a great variety of food; when analysed or resolved into their original elements, we find them composed of a great variety of substances. If Mr. Vanleer objects to my signature, *instead* of "striking at a mask," if desired, the editor will *unmask.*

A. L. Farmer.

Rebellious Hens.—A neighbour of ours states, that hog's lard is the best thing he can find to mix with the dough he gives to his hens. He says, one cut of this fat, as large as a walnut, will set a hen to laying immediately after she has been broken up from her setting; and thus his hens lay through the whole winter. Will some more experimenters try the virtue of hog's lard?—*Massachusetts Ploughman.*

For the Farmers' Cabinet.

Fall Ploughing.

The writers in the Cabinet, who advocate the system of fall ploughing, will be gratified to learn that the experiment has been made by our friend Mr. Isaac Roberts, of Spring-mill, on an extensive scale; having ploughed up his corn-ground, 16 acres, the last autumn, laying it high and dry for the winter, and sowing it this spring with oats, without another stirring, on the day when his neighbours began to plough their land for the same crop; and I confess that I never saw any management that bade fairer for success: for although the land lies high and is liable to wash, and indeed has suffered somewhat from that cause, yet one single tine of the harrow, after the oats were sown, was quite sufficient to prepare the land for the clover seed; another tine being ample to complete the business, leaving the surface like an ash-heap. Thus he has stolen a march upon us, and gained a week, which in this late season, may be perhaps, about equal to the rent of the land, besides relieving himself of much toil and trouble. I fancy I now begin to see into the matter, and regret that I am not prepared to take advantage of the circumstance; so true is it, that a farmer's life consists but of a few seasons, one of which being missed, can never be recalled—let our young men, therefore, be up and doing, "while it is day."

On walking over the land, I think I have convinced myself that the thing must work right. Here is a finely pulverized surface, in which for the seed to vegetate, with a compact under soil, in which for the roots of the plants to hold; which is as necessary for the growth of oats as for wheat; it having been ascertained, that both plants feed on the same pabulum, and require the same tenacity of soil for their support: and I shall watch with much interest the growth of the crop, not doubting that it will stand erect at the time of harvest, and not fall before ripening, as is the very general state of our oat crops. But this is only a part of our friend's intended plan; he sows red clover on his oats, allowing an extra quantity of seed, with the expectation of obtaining from so pulverized and enriched a surface, a full plant and very clean crop: and on this clover, early the next spring, or rather in late winter, he will carry abroad his dung from the straw-yard as a top-dressing, allowing it to be grown in by the crop; after which he may either take two crops of hay, or one of hay, and feed lightly the second crop of clover, and turn down for wheat; sowing after a single ploughing, with every prospect in the world of escaping the rust, cheating the fly, and obtaining a glorious crop of grain, with not too much straw; leaving the land in good heart for any other crop, and varying that eternal routine, corn, oats, wheat, of which I must confess I have long been weary. The above, I find is the English mode of management for wheat; and although it is readily admitted that our circumstances and climate are different, yet the first principles of agriculture are the same at all times and in all places, and this is one that might be rationally adopted, without extra labour or cost, and promising full success—indeed what is there to offer against it? I can see nothing, and therefore repeat, I wish I was prepared to go into the experiment, being quite ready to share the risk, and take the chance for profit.

Since writing the above, a friend assures me that this plan is by no means original, for he remembers that 40 years ago, it was practised by an intelligent person whom he knew, and that it was crowned with the most perfect success, his crop being nearly doubled by it; and yet he relinquished it, although he could never tell why! And so, with respect to the proposal to raise corn on the same land every year in succession; I saw but yesterday, a man who assures me he has practised this plan for the last five years, and has regularly obtained a better crop—that of last year the best; and he intends to continue the practice. I presume, however, that there *is* something original in the proposal to manure the land with the corn-stalks, by ploughing them under in the autumn; and yet I see nothing preposterous in it, particularly if Bommer's mode of decomposing vegetable substances should be applicable in the case; probably the articles which he uses to create fermentation, could be applied to the stalks and roots as they lie along the furrow, and thus a perfect amalgamation with the soil might be produced, by the time of planting in the spring, requiring no further stirring. Are there any of your readers who can inform us, whether Bommer's method could be made subservient to the purpose? T. D.

Spring Mill, April, 1843.

Red Cedar.—If the lining of drawers in which clothes are kept is made of pencil cedar, no moths or other destructive insects will get into them. This wood is cheaper than wainscot or mahogany, and gives an agreeable perfume to the clothes.—*New Genesee Farmer.*

THE FARMERS' CABINET,
AND
AMERICAN HERD-BOOK.

PHILADELPHIA, FIFTH MONTH, 1843.

In our last number we ventured the opinion, that the use of marl, &c., was about to open a new era in Southern agriculture. Much that we hear from that section of our country confirms this sentiment. The President of the State Agricultural Society of South Carolina, in a circular which we find in the last number of the Southern Agriculturist, remarks; "with a genial climate, and a soil naturally fertile and admirably adapted to many of the most valuable crops in the world, the wealth of South Carolina might be immeasurably increased, if her agricultural resources were known. In their examination and developement, Mr. Ruffin is now engaged. His discoveries have already far exceeded his anticipations. Extensive beds of marl of unusual abundance and richness, it is now evident, not only exist in the lower districts, but there are satisfactory indications, that calcareous matter in some form, is generally diffused through the State." And in a recent letter from Edmund Ruffin, the agricultural surveyor of the State, to the President abovementioned, he expresses his opinion, that "millions of dollars in value, of newly created agricultural wealth, will accrue to the State within a few years after the commencement of the general use of calcareous manures." He says also, "from my examinations already made, I feel authorised to assert that the marl, or soft limestone formation of South Carolina, is more widely extended and abundant, more rich in calcareous earth, and more generally accessible, and that the proper application will be more profitable, compared with the necessary outlay, than of any other extensive region yet known."

THE Central New York Farmer, as we learn from the March number, has been adding to its Editorial strength—and we trust, to its *potentiality* of usefulness, as Dr. Johnson might say, by enlisting C. N. Bement, Esq., of Albany, in its service. We congratulate the former editors upon this circumstance.

"There is no monopoly in agriculture; no patent rights for the best method of cultivating crops;" says the new co-editor: "the field is broad and open to all, and the best requital we can make for distinguished benefits resulting from an enlightened system of practice, is to tender to others a participation in the benefits which our better practice confers." He regards the circulation of "agricultural journals in the light of the subsoil plough—they penetrate into the under crust" of the mind, and by stirring up and exciting the faculties, set the farmers to thinking, and have thus been instrumental in sending forth the spirit of improvement over our land, from which vast benefits have resulted. "Farmers," says he—and we would like our friends to continue to bear it in mind—"farmers want plain facts conveyed in plain language; descriptions of processes, and statements of experiments, which, if followed, may lead to increased profits of labour."

C. CUMMINGS, glue manufacturer of this city, informed us a few days since, that both last year and the year before, he sold several hundred tons of bones to be shipped to Hull, in England, for the purpose of being ground for manure. And this season, he assures us there will be at least 500 tons of the same article shipped hence, for the same place. Why is it that bone dust is so much more highly valued in England, than by our own farmers? Is it owing to a difference of climate, soil, or mode of application? or have our farmers not sufficiently tried the article, to appreciate its value. We believe the English apply it principally to their root crops.

"THE FARMER'S ENCYCLOPÆDIA
AND
DICTIONARY OF RURAL AFFAIRS:

Embracing all the recent discoveries in Agricultural Chemistry, adapted to the comprehension of unscientific readers, by CUTHBERT W. JOHNSON; enlarged, improved and adapted to the United States, by a *Practical Farmer*, assisted by numerous scientific gentlemen, is now in course of publication by Carey & Hart, of this city."

The fifth number of this work has appeared since our last, and is an excellent one. It contains a full description of the mode of making capons. This is a part of rural economy, towards which a good deal of attention has latterly been directed. The curious in such matters, will find all the instruction they may need. We have also been particularly struck with the extended articles on *cattle*, and the caterpillar. These, with the highly interesting essay on bees, in the third number, are of more value to the practical man, than the cost of the whole work. The style in which it is executed, really does credit to the enterprising publishers.

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. The money to be paid in advance.

THE first number of the second volume of the American Agriculturist, comes to us in a very neat form indeed. There is a decided improvement in the vignette—it is now quite ornamental to the first page. We had long trembled for that pig, treading upon the rake-tooth, with his nose under the scythe! It is published monthly in New York, at one dollar per annum, and is ably edited by A. B. Allen. A great variety of matter is judiciously thrown into this, as well as the preceding numbers, and it cannot fail to have an extensive and beneficial influence upon the good cause for which it is labouring.

WE are in the receipt of the Southern Cultivator, published every fortnight at Augusta, Ga., by J. W. and W. S. Jones. It is devoted to the Agriculture of the South, and gives promise to be an able auxiliary in promoting the substantial interests of that section of our country. It has our hearty good wishes.

THE HONEY BEE:

Its natural History, Physiology, and Management; by Edward Bevan; published in Philadelphia, by Carey & Hart;—price 31¼ cents—with 35 engravings on wood.

This is an excellent practical treatise, and should be in the hands of every person who keeps bees: and where is the farmer who might not just as well have a few swarms, as be without them? They are a delightful and companionable appendage to the farm-yard or garden, and often a source of very considerable profit. A friend who was a few days ago in our office, referred to a person in the State of New York, who sold one season, $39 worth of honey, from a single colony! "Who can withhold his admiration of the ingenuity and judgment of the bees?" says our author; and who does not relish the privilege of *sharing* with them, the treasures of the hive, the fruits of their industry and their master's care? We are much pleased with this volume, which the publishers have thrown into so cheap a form. It may be obtained either of them, or at this office.

AGRICULTURAL IMPLEMENT MANUFACTORY,

No. 196, Market street, two doors above Sixth, and two doors below the Red Lion Hotel, Philad.;

Where are manufactured, and for sale at low prices, Horse Powers and Threshing Machines, Rice's and other Fanning Mills, Corn Shellers, Straw and Hay Cutters, Horse Rakes, Ploughs of all kinds, and Harrows, Cultivators, Seed Planters, Cheese Presses, Churns, and every kind of Farming Implement generally in use. Also, every description of Implement made to order or repaired, by experienced workmen, and warranted. Slater's Patent Corn Sheller and Grinder; Plough castings of most kinds on hand.

EDWIN CHANDLER,

Agent for Agricultural Machines of every description.

Our friends of the New Genesee Farmer, will please accept our thanks for the Bassano beet-seed. They shall be properly distributed.

POUDRETTE.

Arrangements have been made by the subscriber with D. K. Minor, of New York, for the sale of this valuable manure, as noticed on page 288. It may be obtained at the office of the Farmer's Cabinet, No. 50, North Fourth street, where we expect to keep a supply constantly on hand. Farmers, gardeners, and the truck growers in New Jersey, will now have an opportunity to avail themselves of an article, so much valued in Europe, and in the neighbourhood of New York, where it is manufactured. The price will be two dollars a barrel, where one or two only are taken—for three or more, it will be somewhat reduced.

Josiah Tatum.

The quantity of rain which fell during the Fourth month, (April,) 1843, was nearly four inches and three quarters. ..... 4.723 inches.

Pennsylvania Hospital, Fifth mo. 1st, 1843.

CONTENTS OF THIS NUMBER.

Irrigation—Lime and Manure. ..... page 297
The Honey Bee. 298
Improve your Home, &c. 300
Root Culture.—Gate-posts—Content of cribs. 301
Lime. 302
Economical Boiler.—Silk Culture. 303
Peach Trees.—Education. 304
Lancaster County Lime. 305
Dead Animals.—Fencing. 306
Thorough Culture of the Soil. 307
Economy for Farmers. 308
Steam Plough. 309
Results of Spade Husbandry. 310
Extraordinary Farm Produce.—Woodlands. 311
Birds on Farms, &c. 312
N. Berry's Cow of the "Alloy" breed. 313
Turnip Culture. 314
Macauley's Eulogium on his Wife.—Crows. 315
Cut-worm,—Clover,—Lime. 316
Lime as a Manure. 317
Colman's European Agricultural Reports. 319
The Milch Cow.—Electricity. 320
Hints on Manuring. 321
Cost of a Farm, &c., on the Western Prairies. 322
The Peach on the Plum-stock. 323
Magnesia, constituent of Soils and Plants. 324
Fall Ploughing. 325
Editorial Notices. 327

THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is edited by James Pedder and the Proprietor, and is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, whenever they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a *complete set* of the work will be furnished; including the first six volumes *half bound*, and the seventh volume *in numbers.* Copies returned to the office of publication will be neatly half bound and lettered at twenty-five cents per volume.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage; that is, one cent on each number within the state, or within one hundred miles of the place of publication out of the state,—and one cent and a half to any other part of the United States—and Post Masters are at liberty to receive subscriptions, and forward them to the Publishers under their frank—thus affording an opportunity to all who wish it, to order the work, and pay for it without expense of postage.

From the Steam-Press of the late Proprietors and Publishers.